MONTHLY WEATHER REVIEW.

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INTRODUCTION.

The REVIEW for April, 1894, is based on reports from 3,215 stations occupied by regular and voluntary observers. These reports are classified as follows: 153 reports from Weather Bureau stations; 41 reports from U. S. Army post surgeons; 2,165 monthly reports from State weather service and voluntary observers; 30 reports from Canadian stations; 223 reports through the Southern Pacific Railway Company; 567 marine reports through the co-operation of the Hydrographic Office, Navy Department, and "New York Herald Weather Service;" weekly or monthly reports from 36 U. S. Life-Saving stations; 18 reports from navigators on the Great Lakes; monthly reports from local services established in all States and Territories; and international simultaneous observations. Trustworthy newspaper extracts and special reports have also been used.

The WEATHER REVIEW for this month has been prepared under the general editorial supervision of Prof. Cleveland Abbe. The statistical tables are furnished by the Division of Records and Meteorological Data, in charge of Mr. A. J. Henry, acting chief of that division.

CHARACTERISTICS OF THE WEATHER FOR APRIL, 1894.

The most notable feature of the weather was the slow motion of the storm center off the coast of New Jersey and New England on the 11th to the 15th, and the attending extensive snowfall in the Middle States. The temperatures were decidedly above the normal in the Lake region and the entire eastern slope of the Rocky Mountains. The precipitation was above the normal on the north Pacific coast and in North Dakota, but was generally below the normal.

The rivers were high in Arkansas and Louisiana and were rising in Oregon and Washington.

The ice on the coasts of Newfoundland and Nova Scotia was driven far west of the ordinary limit and was unusually heavy.

ATMOSPHERIC PRESSURE.

[*In inches and hundredths.*]

The distribution of mean atmospheric pressure reduced to sea level for April, 1894, as determined from observations taken daily at 8 a. m. and 8 p. m. (seventy-fifth meridian time), is shown by isobars on Chart II, which also gives the so-called resultant wind direction for this month; these resultants are also given numerically in Tables VIII and IX of the present REVIEW. The pressures here charted are those shown by mercurial barometers as affected by local gravity and need to be reduced to standard gravity. That part of this reduction that depends on latitude is shown by the numbers printed on the border of Chart II; it should be applied and new isobars drawn by those engaged in special researches.

During the current month of April the pressures at sea level have been highest (30.17 to 30.10) on the coast of northern California, Oregon, and Washington, and nearly as high (30.12 to 30.10) on the coasts of Florida, Georgia, South Carolina, and North Carolina; these two regions of high pressure evidently represent, respectively, the northeastern border of the high pressure over the Pacific and the southwestern border of the high over the Atlantic. The regions of low pressure were 29.90, or less, from Yuma, Ariz., southward, as also 29.90, or less, in eastern Montana, and northward over Alberta, Assiniboia, and Saskatchewan.

The normal distribution of atmospheric pressure and normal resultant wind direction for the month of April were approximately shown on Chart VIII of the REVIEW for April, 1893, as computed by Prof. H. A. Hazen, and are not now reproduced. As compared with the normal for April, the mean pressure for the current month was in excess at all stations in the Pacific and Atlantic States, the Lake region, the Mississippi Valley, and the Gulf States, but was below the normal on the east and north Rocky Mountain slopes. The principal excess was 0.10 to 0.15 in New England, Nova Scotia, and New Brunswick; also 0.05 to 0.09 in Washington and Oregon. The principal deficit was 0.05 to 0.10 in Assiniboia. The line of no departure passed from Alberta southeast to New Mexico, thence west into southern California; it reappeared in central Texas and ran northward to the center of Lake Superior.

As compared with the preceding month of March the mean pressure of April was lower at all stations, except in a portion of the Lake region and Washington and Oregon. The line of no change passed through Nova Scotia, Maine, northern New York, western Pennsylvania, southern Michigan, northern Illinois, central Wisconsin, Minnesota, and Manitoba; it reappeared in western Alberta, passed through central Idaho, Nevada, and northern California westward to the Pacific. The principal fall was from 0.10 to 0.12 in eastern Montana, and the principal rise was 0.10 to 0.17 on the coasts of Oregon and Washington.

The systematic periodic diurnal variations of pressure are shown by the hourly means given in Table VI.

AREAS OF HIGH AND LOW PRESSURE.

The following sections give details as to the general phe-

nomena attending the individual areas of high and low pressure; the storm warnings officially issued by the Weather Bureau are also enumerated in connection with the respective disturbances.

MOVEMENTS OF CENTERS.

The following table shows the date and location of the center at the beginning and ending of each area of high or low pressure that has appeared on the U. S. Weather Maps during the month, together with the average daily and hourly velocities. The monthly averages will differ according as we consider each path as a distinct unit, or give equal weight to each hour of observation; in the first case the monthly average is taken by paths, in the latter case by hours:

Movements of centers of areas of high and low pressure.

Number.	First observed.			Last observed.			Path.		Average velocities.	
	Date.	Lat. N.	Long. W.	Date.	Lat. N.	Long. W.	Length.	Duration.	Daily.	Hourly.
High areas.		°	°		°	°	*Miles.*	*Days.*	*Miles.*	*Miles.*
I	1, a. m.	36	109	7, a. m.	33	78	4,200	6.0	700	29
II	1, a. m.	52	96	3, p. m.	37	74	1,600	2.5	640	27
III	7, a. m.	44	129	10, a. m.	30	100	1,900	3.0	633	26
IV	7, a. m.	57	89	12, a. m.	49	56	1,850	5.0	370	15
V	11, a. m.	40	127	12, a. m.	43	126	300	1.0	300	12
VI	12, a. m.	53	114	14, a. m.	47	86	1,350	2.0	675	28
VII	12, a. m.	46	93	16, a. m.	49	65	1,650	4.0	413	17
VIII	16, a. m.	42	126	22, a. m.	43	94	1,500	6.0	250	11
IX	24, a. m.	50	86	29, a. m.	30	80	1,700	5.0	340	14
X	24, p. m.	44	115	25, a. m.	44	109	400	1.0	400	17
XI	27, a. m.	43	129	30, a. m.	42	108	50	3.0	166	7
XII	28, a. m.	50	90	30, p. m.	36	71	1,500	2.5	600	25
Sums							18,000	41.0	5,487	
Mean of 12 paths									457	19.0
Mean of 41 days									439	18.3
Low areas.										
I	1, a. m.	49	66	2, a. m.	49	53	700	1.0	700	29
II	1, a. m.	54	115	6, a. m.	47	55	2,900	5.0	580	24
III	1, a. m.	33	95	1, p. m.	34	84	300	0.5	600	25
IV										
V	6, p. m.	52	114	7, a. m.	54	109	300	0.5		
VI	7, p. m.	43	101	10, p. m.	44	85	1,750	3.0	583	24
VII	6, p. m.	42	93	9, p. m.	44	60	2,000	3.0	667	28
VIII	10, p. m.	36	75	14, a. m.	42	45	700	3.5	200	8
IX	10, a. m.	53	116	13, p. m.	30	100	1,900	2.5	760	32
X	13, a. m.	53	117	16, a. m.	47	87	1,500	3.0	500	21
XI	16, a. m.	41	108	21, p. m.	48	73	2,000	5.5	364	15
XII	22, a. m.	41	74	25, a. m.	47	58	1,300	3.0	433	18
XIII	17, p. m.	48	113							
XIV	21, a. m.	52	115	25, p. m.	47	96	1,300	4.5	289	12
XV	22, p. m.	32	102	25, a. m.	26	97	1,200	2.5	480	20
XVI	26, a. m.	49	123	30, p. m.	51	87	1,600	4.5	356	15
XVII	27, p. m.	43	105	30, p. m.	42	98	900	3.0	300	13
Sums							20,350	45.0	6,812	
Mean of 14 paths									487	20.3
Mean of 45 days									452	18.8

HIGH AREAS.

I.—This was apparently the eastern end of the so-called tropical area over the Pacific Ocean. After pushing eastward over the Rocky Mountain plateau on the 1st, the highest pressure seems to have retreated to the west and extended northeastward toward Oregon, but by the morning of the 3d it had again pushed eastward over the Rocky Mountains, and on the morning of the 4th the highest pressure extended from British Columbia southeast over Wyoming, and was entirely east of the Rocky Mountain Divide. Severe frosts occurred on the mornings of the 3d, 4th, and 5th in northern California, Washington, Oregon, Idaho, and western Montana. The highest pressure moved south and east, being central on the 5th, a. m., in Kansas; 6th, a. m., in Tennessee, with severe frosts in adjoining States. and on the 7th, a. m., off the south Atlantic coast, with light frosts in North Carolina, South Carolina, and Tennessee, after which this high area disappeared over the ocean.

II.—This was a continuation of high area No. XIX from March. It appeared on the 1st, a. m., in Manitoba, while low area No. II was developing between it and high area No. I; it moved rapidly southeastward; the 2d, a. m., it was central near Lake Superior; 3d, a. m., in eastern Pennsylvania, and 3d, p. m., was off the middle Atlantic coast, where it disappeared.

III.—On the 7th, a. m., pressure rose off the coast of Oregon, apparently due to the motion northeastward of a high area from the Pacific Ocean. Just as in the case of high area No. I, we have here also a low area, No. V, developing apparently in British Columbia, while the high area, No. IV, develops to the eastward of it and high area No. III to the southwest. During the 7th and 8th the high pressure pushed eastward into Idaho and Montana, and by the 8th, p. m., was central in Utah; 9th, a. m., Colorado; 9th, p. m., the area of high pressure extended from Oregon and Idaho to Texas without much difference of pressure over this region, and this very rapid southeastward extension was accompanied by high north and northwest winds as well as by low pressure to the south and east, one of which developed into low area No. VI, which was central on the morning of the 10th in southern Michigan, while high area No. III was then central in western Texas, after which it disappeared.

IV.—On the 7th, a. m., pressure was rising with northeast winds on Lake Superior, while low No. V was central in Saskatchewan. Subsequent maps show that an area of high pressure must at that time have been central over Hudson Bay and moving southeastward, so that by the 8th, a. m., it was south of James Bay, while the central region of high pressure moved eastward. An area of low temperature moved more rapidly southward; on the 8th, a. m., pressure continued highest in Ontario, but temperature had fallen most decidedly in North Carolina; by the 10th, a. m., pressure was highest in the St. Lawrence Valley, Maine, and New Brunswick, but temperature had continued falling in North Carolina. On the 11th, a. m., pressure was highest over the Gulf of St. Lawrence, and by the 12th, a. m., over Newfoundland, after which this high area disappeared in the presence of low No. VIII, which was at that time moving along the New England coast.

V, VI, and VII.—On the 11th, a. m., pressure was highest off the coast of Oregon, but at the same time the extreme western portion of area No. IV, reaching from Manitoba into Minnesota, began its southward movement and may be called area No. VII; by the 12th, a. m., beside these two areas of high pressure, there was also an appreciable rise, with northerly winds and cooler air, in Assiniboia and Saskatchewan, which is called area No. VI, so that pressure was at or above the normal across the entire continent from Oregon to Nova Scotia, while to the southward pressures were low in Texas and on the middle Atlantic coast. The high pressure over Oregon (No. V) disappeared by the 13th, a. m., but that in Minnesota (VII) continued and was joined by that from Saskatchewan (VI), so that by the morning of the 14th a moderate high prevailed from Lake Superior southward. This high pressure moved eastward, passing over the mouth of the St. Lawrence on the 16th, a. m., after which it disappeared.

VIII.—The high area over the Pacific west of Oregon began pressing eastward on the 16th, a. m., while low area No. XI, which had for several days been prevailing throughout the Rocky Mountain region, advanced eastward, reaching Iowa on the 18th, p. m. From the 16th to the 18th pressure was high over northern California, Washington, and Oregon, apparently as the eastern edge of the high pressure on the Pacific, but by the 19th, a. m., pressure was highest in Idaho and stretched southeastward as a ridge that reached from Wyoming into Texas and the Gulf of Mexico by the morning of the 20th, while at the same time stretching northeastward into Manitoba. By the morning of the 21st the highest pressure was in Minnesota, extending thence southwest to California, south

into Texas, and southeast over Florida. By the 22d, a. m., although the highest pressure was in Iowa, yet pressure was so uniform that we must consider high area No. VIII as having disappeared.

IX.—On the 21st and 22d pressure rose in Saskatchewan and Manitoba, in the rear of low area No. XIV, which was moving southward, and on the 24th, a. m., pressure was highest north of Lake Superior; the front moved rapidly southeastward, and by the 26th, a. m., the highest pressure was central in North Carolina, and remained on the south Atlantic coast until the 28th, a. m., and over Florida on the 29th, a. m., after which it disappeared. In connection with this high area high northeast winds occurred on the Atlantic coast, and signals were ordered, on the 25th, 3.30 p. m., for northeast winds from Norfolk section to Savannah.

X.—On the 23d and 24th an area of high pressure pushed eastward from the Pacific, and on the morning of the latter date a ridge extended from southern Utah to Washington, while low area No. XIV was central in Montana. On the 24th, p. m., this ridge of high pressure was central in Idaho, and on the 25th, a. m., in Wyoming. By the 25th, p. m., this area of high pressure had entirely disappeared, evidently owing to the decided rise of temperature in the full sunshine over the Rocky Mountain plateau, and the rapid extension southeastward of the low pressure, No. XVI, that was then approaching Oregon.

XI.—On the 27th pressure rose decidedly on the Pacific coast, while low area No. XVI moved eastward over British Columbia, and from that date until the 30th, a. m., pressure rose steadily and slowly throughout the Pacific States and Rocky Mountain plateau region. As the highest pressure continued always off the coast of Oregon this general rise represented the northeasterly extension of the high pressure over the Pacific Ocean. During this period the areas of rainfall that were at first near the Pacific coast were gradually pushed further eastward, so that on the last day of the month the Pacific coast and Rocky Mountain plateau generally had clear dry weather, and the rainy areas were east of the Rocky Mountain Divide.

XII.—On the 28th pressure rose north of Lake Superior, while low area No. XVI extended from Athabasca southeast to Colorado; 29th, a. m., the central high pressure had moved southeast into the St. Lawrence Valley, and by the 30th, a. m., still further southeast, until it was off the middle Atlantic coast, after which its progress was more southerly.

LOW AREAS.

I.—This was a continuation of low area No. XXI of the March REVIEW; it was central on the 1st, a. m., at the mouth of the St. Lawrence; the 2d, a. m., apparently northeast of Newfoundland. Signals for high southwest winds were ordered on the 12th, 11 a. m., at Eastport and Narragansett.

II.—On the 1st, a. m., the weather maps show a high pressure over the Rocky Mountain plateau, a slight diminution in eastern Texas, and a definite low in Athabasca; these two depressions represent, respectively, the edges of the Mexican or tropical low and the Bering Sea or Alaskan low, and from these two regions there continued to emanate during the month a series of areas of low pressure which generally, at first, stretched toward each other along the eastern Rocky Mountain slope and then moved eastward.

On the 1st, a. m., pressure was lowest in Athabasca; this depression stretched rapidly southeast, while the center moved at first southeast into Minnesota and thence east over New Brunswick. On the 2d, p. m., its southward extension into Kansas, formed one or more subsidiary lows, and northwesterly gales prevailed from Montana to Texas and Kansas. On the 3d and 4th the center passed over Lake Superior, and southeast to southwest gales prevailed over the Lake region. On the 4th and 5th, while the center was moving eastward through Ontario, severe southwest and northwest gales prevailed over the Lakes. In connection with this storm center special warnings of severe local storms were sent on the 3d, 10.30 a. m., to the observers at Chicago, Ill.; Sault Ste. Marie, Mich.; Des Moines, Dubuque, and Keokuk, Iowa; La Crosse, Green Bay, and Milwaukee, Wis.; and Duluth and St. Paul, Minn. On the 4th, 2.30 p. m., a special warning, "Dangerous storm on the coast," was sent to the secretaries of the Maritime Exchanges at New York and Philadelphia, and also to the local observers between Baltimore, Md., and Eastport, Me., inclusive. In connection with this low area signals for high winds were ordered as follows: 3d, 10.20 a. m., southwest at Grand Haven, Mich.; 3d, 11 p. m., southwest at Woods Holl section to Atlantic City, N. J.; 4th, 10.50 a. m., at Boston, Mass., to Eastport, Me.; 4th, 11 a. m., continue southwest at Grand Haven, Mich.; 4th, 2.45 p. m., southwest at Norfolk section to Breakwater.

III.—This slight depression was central on the morning of the 1st in Arkansas and eastern Texas; it soon dissipated into an area of rain over the interior of the Gulf States on the afternoon of that day.

IV.—This represents the low pressure that frequently extends up the Gulf of California into Arizona and Mexico; the pressure was lowest at Yuma, Ariz., on the 3d, 7th, 11th, 14th, 20th, 27th, and 30th. From the 6th to the 11th pressure was also low to the northward, even as far as Athabasca, and the low area that had moved southeastward over British Columbia on the 5th and was central in Athabasca on the 6th, p. m., seems finally to have joined with the northward extension of low area No. IV, forming the well-defined depression No. V.

V and VI.—This area, No. V, passed over British Columbia on the 5th, extending rapidly southeastward over the Rocky Mountain plateau, and on the 6th, p. m., was central in Alberta, while a minor depression, No. VII, was central in Iowa, where it had apparently developed during that day. During the 7th the former depression, No. V, considered as a distinct whirl, virtually disappeared in Manitoba, but at its southern extremity a new depression and cyclonic whirl, No. VI, developed in western Nebraska and South Dakota, while the minor depression, which is numbered VII, moved from Ohio into West Virginia and began its more important development. Meanwhile the depression No. IV also deepened and increased its area, so that it, together with No. VI and what remained of No. V, virtually constituted a large depression which extended from Mexico to Manitoba. No. VI moved to the south-southeast, reaching Oklahoma on the 8th, p. m.; its northern end was, on the 9th, a. m., central in Missouri, and on the 10th it passed northeastward over the Lake region as a very severe storm. After the 10th, p. m., this area, No. VI, was rapidly broken up.

In connection with area No. VI signals for high winds were ordered as follows: 8th, 11 p. m., southeast at Grand Haven; 9th, 11 p. m., continue Grand Haven southeast and order Milwaukee northeast; 9th, 11.20 p. m., southeast at all stations on lakes Erie and Huron; 9th, 11.20 p. m., northwest at Chicago; 10th, 11.50 a. m., southeast on Lake Ontario; 10th, 11.50 a. m., southeast, Baltimore to Newport section; 10th, 1 p. m., southeast, Boston and Boston section; 10th, 1 p. m., southeast, West Point, Va., to Wilmington section; 10th, 1 p. m., change to northwest at Milwaukee, Grand Haven, Lake Huron, and Lake Erie.

VII.—On the 8th, a. m., No. VII was off the middle Atlantic coast, while high area No. IV was central north of the Lake region; the flow of the cold air from the northeast over New England and New York, with rain and snow during the 8th, caused No. VII to rapidly develop into a well-marked cyclonic storm, which moved northeastward along

the coast, and was central on the 9th, a. m., south of Halifax, but on the 9th, p. m., east of Halifax, after which it disappeared from our coast.

In connection with this low area, No. VII, signals for high winds were ordered as follows: 8th, 10.18 a. m., southeast, Boston and section to Eastport; 8th, 11 a. m., northeast, Sandy Hook to Narragansett section, except New York; 9th, 10.50 a. m., continue southeast at Eastport; 9th, 11 p. m., continue northeast at Woods Holl.

VIII.—This depression appeared on the 10th, a. m., as a special local disturbance southeast of the center of No. VI. At that time, while an area of 29.55, with cyclonic winds, heavy rain, and snow, prevailed at the southern end of Lake Michigan, the isobar of 29.8 passed through eastern Tennessee and western Virginia. By the 10th, p. m., this line of 29.8 inclosed two low areas, one central in Michigan the other central on the coast of Virginia, into which position it had evidently moved from the western portion of that State, attended by high southwest winds at Wilmington and Hatteras. From this time on area No. VI rapidly died away, while No. VIII moved slowly up the coast as a violent whirling storm. On the 12th, a. m., No. VIII was central some distance east of New Jersey, but afterward moved more rapidly eastward than northward. From the 11th, a. m., until the 13th, a. m., the storm center seems to have moved only from near Cape May, N. J., to near Cape Cod, Mass., and the heavy snow and rain from New Jersey to Massachusetts with high northeast and northwest winds made this the most memorable storm for this season of the year since March, 1888.

In connection with low area No. VIII signals for high winds were ordered as follows: 10th, 11 p. m., Boston, Mass., and section, changed from southeast to northeast; 10th, 11 p. m., northeast at Portland and Eastport, Me.; 11th, 10.15 a. m., West Point, Va., to Atlantic City, N. J., changed from southeast to northwest; 11th, 10.15 a. m., Sandy Hook, N. J., to Woods Holl, Mass., section, changed from southeast to northeast; 11th, 11.10 p. m., Boston, Mass., to Eastport, Me., continue northeast; 12th, 11 a. m., Sandy Hook, N. J., to Woods Holl, Mass., section, continue northeast; 12th, 11.10 p. m., Boston, Mass., and section to Eastport, Me., continue northeast; 13th, 10 a. m., Atlantic City, N. J., to Portland, Me., change northeast to northwest; 13th, 10.20 a. m., northwest from Delaware Breakwater to Norfolk section; 13th, 10.30 p. m., Eastport, Me., continue northeast.

IX.—On the 9th, p. m., pressure began to fall in British Columbia and Alberta, and by the 10th, a. m., was lowest at Edmonton. This center moved southeastward over Assiniboia, thence southward into Montana, where it was central on the 11th, a. m.; meanwhile pressure had fallen far to the southward over and beyond Texas and northern Mexico; therefore, evidently, this central depression is to be considered only as one spot in a trough of low pressure, extending indefinitely north and south, possibly forming part of one of those great waves that must exist in the upper atmosphere and whose movements have been studied mathematically by Helmholtz and Margules. By the 11th, p. m., the principal depression was central in Colorado; 12th, a. m., northern Texas; 12th, p. m., western Texas; 13th, a. m., southwest Texas; 13th, p. m., southwest Texas. In connection with low area No. IX signals for high winds were ordered as follows: 12th, 11.10 p. m., southeast at Corpus Christi, Tex.; 13th, 10.30 p. m., continue southeast at Corpus Christi, Tex.; 13th, 11.00 p. m., southeast at Galveston, Tex.

It can scarcely be thought that this rapid southward movement represents either the movement of a whirling system of winds with low pressure or the movement of the trough of a single wave of low pressure; it is more reasonable to look upon it as the movement of a locus or node of intersection and interference of waves and troughs of pressure that are slowly changing their positions in the atmosphere at some distance above the earth's surface. The resistances which the atmosphere experiences in its effort to move over the earth's surface may be described as follows: (1) By impinging on the irregularities of the continents and the waves of the ocean a certain amount of forward motion is annulled and a portion of the atmosphere receives a vertical or even a backward motion, so that the advancing air is mixed with other air moving more sluggishly forward or even backward; as a result the advancing air gives up a portion of its momentum to the sluggish air and both combine to move with an intermediate velocity. (2) By the heating of the surface of the earth and the ocean the sluggish-moving lower stratum is made to rise, the more rapidly moving upper stratum descends to take its place, and the resulting intermixed atmosphere moves with an intermediate velocity. As a result of these two influences, the movement of the middle portion of the atmosphere experiences a retardation that depends upon the amount of vertical convection that is determined by the roughness of the ground and the intensity of insolation; this amount is, of course, greatest over the continents and in sunlight, but least over the ocean and in darkness. Above the region of strong vertical convection the atmosphere moves with much greater smoothness, possibly even with what is known as steady flow, while between these two portions of the atmosphere may exist a third separating layer in which cylindrical atmospheric rolls with horizontal axes may exist.

The lowest stratum is subject to violent commotions, which are, however, contained below the separating surface, technically called a discontinuous surface. This intermediate layer of rolls, separating the lower from the upper atmosphere, heaves like the billows or the swell on the surface of the ocean, and occasionally simulates the formation of breakers. Over certain regions and at certain times of the day and the year this layer is absent, but at other times and places it is well developed. The upper layer presents far swifter horizontal motions that are affected only by the exceedingly feeble viscosity of cold air, by the slight gradients up and down which it has to move, by the rotation and the gravity of the earth, and, finally, by the tidal action of the sun and moon. Under these forces the upper portion of the atmosphere, resting as it does upon the lower, affects the latter principally by slight variations of pressure, and can cause areas of high and low pressure to move in a manner different from what would have been considered probable when studying only the lower atmosphere. In the lower atmosphere, which is that studied by Espy and his disciples, we consider the effects of vertical convection, the condensation of vapor, the formation of small whirlwinds, such as waterspouts and tornadoes, but in studying the upper atmosphere, which is that to which the mathematical study of hydrodynamics has generally applied, we have to deal not only with large whirls but with forced and free tidal waves and with the standing waves due to the overcoming of obstacles. We even consider the possibility of a wave on the lower surface of the upper layer as breaking, as it were, at its inverted summit and forcibly mixing its foam, viz, the upper air, with our lower atmosphere, thereby setting up temporarily such mixtures as facilitate the formation of lows and violent winds and rain over large areas of the lower atmosphere.

From this point of view, the phenomena observed at the surface of the earth become complex combinations of those peculiar to the upper and lower atmosphere respectively, and it becomes possible to see that from April 9 to 13, a trough of low pressure, passing southeastward high above the Rocky Mountains, might be interfered with in such a way as to leave at its southern end only a small depression, as a locus moving southward and gradually filling up. A very similar occurrence took place from the 14th to the 18th, except only that in the former case the winds induced at the earth's surface

were not able to develop the low pressure into a storm center, whereas in the latter case they found the lower atmosphere in a more favorable condition and did develop rain and an increasing cyclonic whirl.

From the same point of view it is evident that the areas of high pressure over the eastern portions of the North Atlantic and the North Pacific may be, in part, due to the obstruction offered by the Eastern and Western Continents, respectively, to the general southeastward movement of masses of descending cold, dry air. The large extent of the Pacific Ocean and the abrupt height of the Rocky Mountains combine to make the high pressure over the Pacific Ocean a little more pronounced than the corresponding high pressure over the North Atlantic Ocean. These high areas owe their existence partly to static and partly to dynamic influences; they represent a sort of standing wave of pressure due to resisted motion, where the pressure accumulates until it becomes sufficient to overcome the increased resistances.

X.—On the 12th pressure fell in British Columbia, and on the 13th it was lowest in Alberta, with high pressure in Manitoba. This depression extended, like its predecessor, rapidly southward, and on the 14th, a. m., pressure had fallen throughout the Rocky Mountain region and the Missouri Valley, the lowest being in Saskatchewan, with a trough extending into Kansas, where a minor depression was central. By the 14th, p. m., pressure was lowest at Yuma, and a general depression prevailed from the Mississippi Valley to California and Oregon, and to an unknown extent north and south. By the 15th, a. m., this area had begun to fill up at its northern, and especially its northwestern side, and the lowest pressures were central in North Dakota and northern Texas, respectively. By the 15th, p. m., the eastern edge of the depression, or the isobar of 29.90, had moved a little eastward and lay between W. 85° and 90°, while on the northwestern side this isobar had moved more decidedly southeastward into Manitoba, North Dakota, and Idaho; pressure had fallen, especially in Arizona, while the original low pressure, which was now central in Minnesota, was less conspicuous. It does not seem proper to consider the lowest pressure now in Arizona as in any way the direct result of the southward movement of a low pressure from Alberta. It may have been the result of a northeastward movement of the low area off the coast of Mexico, or more likely was due to a combination of the, as yet unknown, conditions existing in the upper atmosphere. A comparison of the maps of the 13th, p. m., and the 15th, p. m., shows that so far as concerns surface temperatures and winds, no change had occurred in the lower atmosphere sufficient to cause the great change of pressure that had been brought about in these two days. The principal characteristics of this change of pressure were the development of the low in Arizona, the filling up of the low in Manitoba and Minnesota, and the rapid approach of an area of high pressure from the northwest to the coast of Oregon and Washington. By the 16th, a. m., the original area of low pressure, No. X, had moved over Lake Superior, and by the 16th, p. m., had disappeared. On the other hand the trough of low pressure over Arizona and Utah had become an isolated depression, central in northwestern Colorado, and its subsequent history is given below, while the high pressure, No. VIII, on the Pacific coast had pushed its northerly winds southward to the Gulf of California.

XI.—This depression was central in northwestern Colorado on the 16th, a. m., and may be considered either as an inclosure of the northerly end of the permanent depression of low area No. IV, or as a new formation in connection with the advance of high No. VIII. By the 17th, a. m., it had become an oval, stretching from northern Texas to Minnesota, having warm southeast winds with rain on its eastern side, and cold northerly winds with snow on its western. At this time two centers of low pressure existed, in the southeastern part of Colorado and South Dakota, respectively; the former area then disappeared as such, while the high northerly winds advanced due southward into western Texas, and on the 17th, a. m., the lowest pressure was central in western Nebraska, where it remained nearly stationary for twelve hours and then moved slowly northeastward, reaching Lake Superior by the 19th, p. m.; here again it was nearly stationary for twelve hours, and by the 20th, p. m., had become a long oval over the northern portion of southern Michigan. By the 21st, p. m., the lowest pressure was central in the St. Lawrence Valley, and the storm of wind and rain had been generally broken up. On the other hand, the cold northwest winds in the rear had, both on the 20th and 21st, produced a minor local whirl and depression, which had, apparently, moved eastward, through Iowa on the 19th, into Ohio on the 20th, and into the middle Atlantic States, where it disappeared on the 20th.

In connection with low area No. XI, a special warning of severe local storms was sent, on the 16th, p. m., to the observers at Wichita and Concordia, Kans., Sioux City, Iowa, Topeka, Kans., Yankton, S. Dak., and Columbia, Mo. Again, on the 17th, 11.20 a. m., special storm warnings were sent to the observers at Fort Smith, Ark., Keokuk and Dubuque, Iowa, Minneapolis, Minn., and Springfield, Mo. Finally, on the 17th, p. m., local storm warnings were sent to Springfield, Ill., Springfield, Mo., Cairo, Ill., Hannibal, Mo., Davenport and Keokuk, Iowa, Columbia, Mo., and Fort Smith, Ark.

In connection with this depression signals for high winds were ordered as follows: 17th, 10.40 a. m., southeast on Lake Michigan; 18th, 11.10 a. m., continue southeast on Lake Michigan; 18th, 11.20 a. m,, southeast at Red Wing, Minn. (Lake Pepin); 18th, 11.20 p. m., southeast at Sault Ste. Marie, Mich., to Cleveland, Ohio; 19th, 11.50 a. m., change Red Wing, Minn, from northeast to southwest; 19th, 11 a. m., southeast from Erie, Pa., to Oswego, N. Y.; 19th, 3.45 p. m., change Sault Ste. Marie, Mich., Green Bay, Wis., and section, Milwaukee, Wis., and section, Grand Haven, Mich., and Mackinaw section, Alpena and Port Huron, Mich., Sandusky, Ohio, to Buffalo, N. Y., from southeast to southwest; 20th, 11.50 a. m., continue southwest at Chicago, Ill., Grand Haven, Mich., and section, Mackinaw, Mich., and section; 20th, 2.30 p. m., southwest from Wilmington, N. C., to Fortress Monroe, Va.; 20th, 3.30 p. m., continue southwest at Sault Ste. Marie, Mich., Green Bay, Wis., to Milwaukee, Wis., Grand Haven, Mich., lakes Huron, Erie, and Ontario.

XII.—On the 22d another special depression developed in New Jersey, which moved northeast and disappeared on the coast of New England on the 23d, p. m., but revived on the 24th off the coast of Nova Scotia.

XIII.—On the 17th pressure fell in British Columbia and a trough of low pressure developed in Alberta, as this moved eastward it rapidly disappeared on the 18th, or possibly merged with No. XI, and was quickly followed by cold northerly winds.

XIV and XV.—On the 20th pressure fell over British Columbia and southern California, and low pressure developed in Alberta, where it was central on the 21st, a. m., at which time, also, a trough of low pressure extended thence southward through Nevada to the Gulf of California; evidently we have here a very long depression, while on its eastern side a corresponding long ridge extended from the region north of Manitoba to Texas and beyond, and on its western side an area of high pressure over the Pacific Ocean was beginning to push eastward. During the 21st and 22d an indefinite area of low pressure, with several subordinate centers, prevailed over the Rocky Mountain plateau and the eastern slope. Low area No. XIV had disappeared by the 23d, a. m., in Montana, but area No. XV took definite shape in Texas on the southern border of the general depression. By the 24th, a.

m., area No. XIV again appeared central in Montana, but by the 25th, p. m., it finally disappeared in Minnesota; it had, of course, during these three days gradually filled up as a barometric depression and broken up as a cyclonic whirl. At the southern end of this general depression the lowest pressure that occurred at Yuma, Ariz., on the 20th, p. m., stretched northward into Nevada on the 22d, a. m., at which time, however, an indefinite low, with opposing winds, existed in western Texas; this latter may be called low No. XV and, by the 25th, a. m., it had disappeared in southern Texas.

The indefinite nature and unimportant phenomena attending lows Nos. XIV and XV do not make them less worthy of study and of numeration in our list of lows, since under slightly different circumstances similar unimportant areas develop into the severest storms, and the reappearance of No. XIV on the 24th, a. m., is a crucial test of imperfect theories as to the cause of low pressures.

XVI.—Pressure fell rapidly on the 25th in Oregon and Washington, and a decided depression was evidently moving eastward or southeastward toward that coast, but as it was central in British Columbia on the 26th and was then moving southeastward, it is likely that on the 25th, a. m., the main depression was far northwest of Oregon. This depression was the most important of the month for that section of the country and brought heavy rain, with high southerly winds, on the 25th and 26th to northern California, Oregon, and Washington. A notable feature was the occurrence of a tornado at Seattle—a very rare phenomenon in Washington. By the 26th, p. m., pressure had begun to rise on the Pacific coast and the lowest pressure was central at Calgary, in Alberta, and extended as a narrow trough throughout that province and southeastward into northwestern Nebraska. Rain continued during the 27th at most stations in the Pacific States, with increasing westerly winds and rising barometer, and the central depression remained in Alberta, while the trough steadily maintained its dimensions, and, by the 27th, p. m., had begun the formation of two separate whirls and low areas, respectively located in eastern Wyoming (XVII) and in Alberta (XVI). The latter remained nearly stationary until the 28th, p. m., as far as can be judged from the few reports that we receive from this region, but by the 29th, a. m., it had moved decidedly eastward and subsequently moved southeastward, extending as a long trough so as to maintain its connection with area No. XVII.

In connection with low area No. XVI on the 26th, a. m., the special dispatch, "Conditions favorable for severe local storms during Friday," was sent to the observers at Bismarck, Williston, Sioux City, Valentine, Rapid City, Yankton, and Pierre.

XVII.—The southern area, No. XVII, which was in Wyoming on the 27th, p. m., moved slowly eastward; it was almost entirely obliterated on the 29th, but was replaced on the 30th in Colorado by a new whirl in its own previous location, which by the 30th, p. m., was central in eastern Nebraska, and is to be considered as included in the same general depression that then extended northward, and also covered No. XVI.

In connection with the beginning of this low area, and on the 28th, p. m., when it was central in western Nebraska, a special warning of severe local storms was sent to observers at Des Moines, Sioux City, Omaha, Yankton, Huron, and Valentine.

NORTH ATLANTIC METEOROLOGY.

[*Pressure in inches and millimeters; wind-force by Beaufort scale.*]

The normal barometric pressure for April over the North Atlantic Ocean, as deduced from international simultaneous observations, is highest, 30.10 to 30.14 (764 to 766), in a belt extending from the west coast of Africa between N. 18° and N. 28°, westward to W. 49°; a corresponding so-called tropical belt prevails on the Pacific Ocean, west of the peninsula of Lower California. The region of lowest pressure, 29.80 to 29.75 (757 to 756), includes Iceland and the southern end of Greenland, and extends from N. 50° and W. 40° to N. 75° and E. 5°; a still lower area of low pressure apparently exists in the North Pacific Ocean, from the southern portion of Alaska westward along the Aleutian Archipelago to W. 165°. The average of this month shows an area of high pressure, 30.10 by 30.20, extending from the interior of British America, at N. 55°, W. 90° to 110°, northward to about N. 70°, W. 100° to 120°; another area of high pressure apparently exists at the northern end of Smith Sound, and to these areas may be added another of 30.10 to 30.20 in Siberia between N. 55° and 70°, E. 90° and 130°. It will be seen that the high pressures in these Arctic regions have steadily diminished since February and are, in April, just about to disappear and be replaced by low pressures in June. These pressures are as given by the mercurial barometer under the influence of local gravity, and need to be increased by 0.07 in order to be expressed in terms of standard gravity.

As compared with March the normal pressures in April are lower by 0.10 in a zone extending from Saskatchewan northwest to the mouth of the McKenzie, at N. 70°, W. 135, and are lower by 0.20 in eastern Siberia and northern China, but less by 0.15 in western Europe; they are higher by 0.25 at North Cape and Nova Zembla.

The departures of the monthly means for April from the annual means for each individual station show a deficit of 0.10 over the Atlantic Ocean south and southeast of Newfoundland, and extending thence over Spain, France, and the Mediterranean, and in general a deficit exists from the equator northward to N. 50° around the whole earth, but an excess prevails north of the zone between N. 50° and N. 70°.

The normal zone of the maximum frequency of storm paths passes from the coast of China, at N. 40°, westward to Japan, thence northeastward along the Japanese and Kurile Islands, crossing Bering Sea to Alaska, attaining N. 58° at W. 152°, thence southeast over British Columbia to Utah, thence eastward to Massachusetts and northeast to Ireland, where it divides toward northern and southern Europe. The regions of maximum frequency seem to be over the Great Lakes, with an average of 2.4 storm tracks per month for each region of 5° square, and, again, east of Newfoundland, with a frequency of 3.0. Low centers occur most frequently over the Missouri Valley and eastern slope of the Rocky Mountains, but many of these are imperfectly developed and dissipated before becoming severe storms.

The normal velocity of storm centers during April is 26 miles per hour in the United States, 20 miles over the Atlantic Ocean, and 18 miles in Europe.

NORTH ATLANTIC STORMS.

The following paragraphs give some account of the areas of low pressure and strong winds on the Atlantic Ocean during April, 1894. Daily charts are compiled at the Weather Bureau showing the United States and European conditions as nearly as practicable at Greenwich noon; these are supplemented by simultaneous data for the ocean received through the co-operation of the Hydrographic Office of the

U. S. Navy Department and the New York Herald Weather Service. From 75 to 100 daily reports from the most frequented portion of the Atlantic Ocean give a basis for approximating to the locations and paths of the more important storms passing between America and Europe.

A. This was a continuation of *(M)* of the north Atlantic series for March. On the 1st, at Greenwich noon, this center was near N. 55°, W. 25°; 2d, N. 52°, W. 16°; 3d, N. 50°, W. 10°; this depression was now almost entirely broken up, and disappeared as it passed eastward into the Bay of Biscay.

B. This was a continuation of United States series No. I, and was central on the 1st, noon, at the mouth of the St. Lawrence; 2d, noon, southern coast of Newfoundland; 3d, noon, extended as a trough between N. 40° and N. 50°, W. 53° and W. 48°; 4th, noon, central N. 50°, W. 35°; 5th, noon, extended as a trough from N. 45°, W. 25°, to N. 55°, W. 30°; 6th, noon, it seems to have separated into two portions, of which the principal one was at N. 45°, W. 20°; 7th, noon, the latter of these two was central at N. 40°, W. 15°, after which it disappeared.

C. This was a continuation of U. S. series No. II, which was central north of Lake Superior on the 4th, noon; 5th, noon, central near the mouth of the St. Lawrence; 6th, noon, at N. 47°, W. 58°; 7th, noon, N. 44°, W. 56°; 8th, noon, N. 50°, W. 42°; 9th, N. 52°, W. 25°; 10th, N. 58°, W. 20°, after which it disappeared in the presence of the extensive area of high pressure that had been advancing eastward over Europe since the 1st of the month.

D. This area developed off the coast of the United States on the 7th and 8th and is number VII of the U. S. series. It was central on the 8th at about N. 38°, W. 72°; 9th, at N. 44°, W. 63°; 10th, N. 43°, W. 55°; 11th, N. 45°, W. 47°; 12th, N. 48°, W. 35°; 13th, N. 52°, W. 20°; 14th, N. 54°, W. 25°; 15th, N. 54°, W. 20°; 16th, N. 53°, W. 14°; 17th, N. 57°, W. 5°; at this time the isobar 29.5 extended far north of Scotland and southward to the Bay of Biscay, over which a minor depression was central and a third depression was forming in the Mediterranean; 18th, noon, the northern and the Mediterranean depressions had disappeared and the principal low pressure was central in France.

E. This was a continuation of low Nos. VI and VII of the U. S. series that passed from Michigan to the coast of Virginia on the 10th; 11th, noon, at N. 38°, W. 73°; 12th, noon, N. 40°, W. 72°; 13th, N. 51°, W. 66°; 14th, noon, N. 42°, W. 64°; 15th, N. 38°, W. 61°; 16th, N. 39°, W. 57°; 17th, N. 42°, W. 58°; 18th, N. 44°, W. 50°; 19th, N. 47°, W. 42°; 20th, N. 52°, W. 35°; 21st, N. 55°, W. 29°; 22d, N. 56°, W. 18°; the central depression that we have thus far followed seems to have died out by the 23d, and to have been replaced by a more important one that had formed at the southwestern end of the general depression in which it was located; this new depression was central on the 23d at N. 46°, W. 21°; by the 24th these two depressions were represented by one center at N. 53°, W. 12°, while southwest winds of force 11 were prevailing off the coast of Ireland; 25th, N. 55°, W. 12°; 26th, N. 56°, W. 11°; 27th, noon, the general depression had extended slightly east and south, but the central area of lowest pressure was now represented by three or more areas of moderate depression over Great Britain and the North Sea; 28th, a moderate depression covered central Europe with several centers; on the 29th and 30th this depression moved southeastward over the Mediterranean.

F. This was a continuation of U. S. series Nos. XI and XII. No. XI was central in the St. Lawrence Valley on the 21st, and No. XII passed over the middle Atlantic States on the 22d, and New England on the 23d; *(F)* was central on the 24th about N. 43°, W. 66°; 25th, N. 45°, W. 57°; 26th, N. 50°, W. 52°; 27th, N. 50°, W. 43°; on the 28th this depression was entirely north of our reports.

G. This depression developed over the Atlantic on the 28th; 29th it was central at about N. 45°, W. 55°; 30th, N. 45°, W. 49°, while an area of unusually high pressure prevailed to the eastward.

OCEAN FOG FOR APRIL, 1894.

The limits of fog belts west of the fortieth meridian, as reported by shipmasters, are shown on Chart I by dotted shading. East of the fifty-fifth meridian fog was reported on 22 dates; between the fifty-fifth and sixty-fifth meridians on 18 dates; and west of the sixty-fifth meridian on 11 dates. Compared with the corresponding month of the last six years, the dates of occurrence of fog east of the fifty-fifth meridian numbered 8 more than the average; between the fifty-fifth and sixty-fifth meridians, 8 more than the average; and west of the sixty-fifth meridian, 1 more than the average.

OCEAN ICE IN APRIL, 1894.

The following table shows the southern and eastern limits of the region within which icebergs or field ice were reported for April during the last 12 years:

Southern limit.			Eastern limit.		
Month.	Lat. N.	Long. W.	Month.	Lat. N.	Long. W.
	° ′	° ′		° ′	° ′
April, 1883	40 49	52 06	April, 1883	48 00	43 00
April, 1884	41 26	48 46	April, 1884	45 25	43 34
April, 1885	41 40	49 50	April, 1885	44 10	39 41
April, 1886	40 51	46 39	April, 1886	*47 43	30 11
April, 1887	40 02	50 04	April, 1887	48 00	38 18
April, 1888	41 33	50 00	April, 1888	47 40	49 00
April, 1889	43 57	50 20	April, 1889	47 16	43 11
April, 1890	40 00	49 40	April, 1890	47 26	35 42
April, 1891	40 01	48 24	April, 1891	45 33	43 32
April, 1892	42 46	49 37	April, 1892	48 58	44 27
April, 1893	42 28	50 14	April, 1893	46 50	46 05
April, 1894	42 00	51 10	April, 1894	44 56	44 00
Mean	41 28	49 44	Mean	46 50	41 43

* Isolated iceberg.

The limits of the region within which icebergs or field ice were reported for April, 1894, are shown on Chart I by crosses. The southernmost ice reported, a large berg, observed on the 16th in the position given, was about one-half of a degree north of the average southern limit, and the easternmost ice reported, one large berg and a few smaller ones on the 1st in the position given, was about two and one-half degrees west of the average eastern limit.

Compared with April, 1893, there was a marked increase in the quantity of ice reported. Ice was reported every day during the month except on 13th to 15th.

On the 7th the British bark *Ruth Palmer* collided with an iceberg off the Grand Banks and sunk. The crew were picked up by the French brigantine *Marie Gabrielle*, and landed at St. Pierre, Newfoundland, 30th.

On the 12th the French steamship *Olbia* landed at St. Pierre, much damaged by striking an iceberg on the voyage from Marseilles.

On the 17th the British steamship *Earncliffe* arrived at Halifax so much damaged by ice met outside of Halifax harbor that she will have to go into dry dock. Extensive reefs of heavy field ice were reported on the eastern coast of Newfoundland.

On the 18th the British steamship *Valletta*, bound for St. John, N. B., foundered in the ice 50 miles east of Halifax. Her crew were saved by the Norwegian bark *Liberté*.

Reports state that easterly gales have packed heavy ice on the shore and in the harbors of Cape Breton Island, blocking navigation even on the southern coast. It is reported that ice was very heavy in the Gulf of St. Lawrence on the 18th. British steamship *Newfoundland*, which for several days had been jammed in the ice off Cow Bay, C. B. I., got clear April 19th, and proceeded to Halifax, N. S. British

steamship *Premier* was unable to reach her destined port, Montreal, on account of ice, and returned to Halifax.

On the 22d reports state that Halifax harbor was completely blocked by heavy Gulf ice. Six steamers and 50 sail vessels were detained in port on account of ice. No such blockade has occurred in the past forty-two years.

On the 24th British steamship *Sarmatian*, from Liverpool to Montreal, stopped at Halifax, being unable to get up the Gulf of St. Lawrence on account of ice. Leaving Halifax on the 25th, she encountered heavy field ice 60 miles northwest of Bird Rocks. She met pack ice 12 feet thick, covered with seals.

On the 26th the British schooner *Algeria* had her bows crushed in by the ice and sunk while attempting to make Renews Harbor, south of St. Johns, N. F.

On the 30th the British steamship *Pomeranian*, in N. 48° 10′, W. 62° 30′, sighted two fields of pack ice and a schooner fast in the middle of one of them.

TEMPERATURE OF THE AIR.

[*In degrees Fahrenheit.*]

The distribution of the monthly mean temperature of the air over the United States and Canada is shown by the dotted isotherms on Chart II; the lines are drawn over the high irregular surface of the Rocky Mountain plateau, although the temperatures have not been reduced to sea level, and the isotherms, therefore, relate to the average surface of the country occupied by our observers; such isotherms are controlled largely by the local topography, and should be drawn and studied in connection with a contour map.

NORMAL TEMPERATURE.

In Table II, for voluntary observers, the mean temperature is given for each station, but in Table I, for the regular stations of the Weather Bureau, both the mean temperatures and the departures from the normal are given for the current month. In the latter table the stations are grouped by geographical districts, for each of which is given the average temperature and departure from the normal; the normal for any district or station may be found by adding the departures to the current average when the latter is below the normal and by subtracting when it is above.

MONTHLY MEAN TEMPERATURE.

For the regular stations of the Weather Bureau the monthly mean temperature is the simple mean of all the daily maxima and minima; for voluntary stations a variety of methods of computation is necessarily allowed, as shown by the notes appended to Table II.

During April, 1894, the mean temperature was highest (84) in southeastern California, and next highest (80) in the lower portion of the Valley of the Rio Grande; at Key West, Fla., the monthly mean was 76.6. The lowest temperatures were: At Canadian stations, 30.8 at Charlottetown, P. E. I.; 33.6 at Sydney, C. B. I.; 34.0 at Father Point, Quebec; 35.2 at Port Arthur, Ont.; 37.0 at Battleford, Saskatchewan. At United States stations the lowest temperatures were: 39.0 at Eastport, Me.; 37.8 at Duluth, Minn.; from 29 to 31 in the mountains of central Colorado; 49.6 at Denver, Colo.; and 44.5 at Tatoosh Island, Wash. The temperature averaged 32 at no point within the limits of our daily map, except on the peaks of the Rocky Mountains and in the central portion of the Gulf of Saint Lawrence.

DEPARTURES FROM NORMAL TEMPERATURE.

As compared with the normal for April, temperatures were in excess in the valleys of the Sacramento and San Joaquin, and at Yuma, Ariz., on the Colorado River; they were also in excess at nearly all stations from the Rocky Mountain Divide eastward to the Atlantic, but were deficient on the east coast of Nova Scotia, and were slightly so at a few stations on the immediate coast of Massachusetts, Connecticut, Virginia, North Carolina, South Carolina, and Florida; the principal deficit extended over the Rocky Mountain plateau and the coasts of Washington, Oregon, and California. The maximum excesses were: 5.5 at Escanaba, Mich.; 7.3 at Parry Sound, Ont.; 7.6 at Rockliffe, Ont.; 5.1 at Winnipeg, Man.; 4.6 at Marquette, Mich., and San Antonio, Tex.; 4.7 at Kingston, Ont.; 4.8 at Saugeen, Ont.; and 4.5 at Green Bay, Wis., and Abilene, Tex. The maximum deficits were: 3.6 at Walla Walla, Wash., and Portland, Oreg.

The departures from normal temperature for the current month, and by districts, are as follows:

Positive departures: New England, 0.6; middle Atlantic coast, 0.4; south Atlantic coast, 0.1; Key West, Fla., 0.6; east Gulf States, 1.0; west Gulf States, 1.7; Ohio Valley and Tennessee, 0.5; upper Lake region, 3.1; lower Lake region, 2.4; North Dakota, 2.8; upper Mississippi and Missouri valleys, 2.3; northern slope, 1.6; middle slope, 2.3; southern slope (Abilene), 4.5; southern plateau, 0.5; middle Pacific, 0.1.

Negative departures: Middle plateau, 1.3; northern plateau, 2.8; north Pacific coast, 2.2; south Pacific coast, 1.2.

The following table shows for certain stations, as reported by voluntary observers, (1) the normal temperature for April for a series of years; (2) the length of record during which the observations have been taken, and from which the normal has been computed; (3) the mean temperature for April, 1894; (4) the departure of the current month from the normal; (5) the extreme monthly means for April and the years of their occurrence during the period of observation:

State and station.	(1) Normal for the month of Apr.	(2) Length of record.	(3) Mean for Apr., 1894.	(4) Departure from normal.	(5) Extreme monthly means for April.			
					Highest.	Year.	Lowest.	Year.
Arizona.	°	*Years*	°	°	°		°	
Fort Apache	52.8	22	53.4	+ 0.9	59.5	1879	47.5	1884
Fort Mohave	70.8	23	.....	.....	77.1	1881	62.2	1891
Whipple Barracks	51.1	22	51.0	— 0.1	61.8	1876	45.4	1884
Arkansas.								
Keesees Ferry	61.7	12	60.5	— 1.2	65.3	1888	56.7	1884
California.								
Riverside	60.4	12	.....	.....	63.8	1885	57.8	1891
Colorado.								
Las Animas	51.3	12	53.2	+ 1.9	56.7	1888	46.2	1884
Florida.								
Merritts Island	72.0	12	72.8	+ 0.8	75.4	1883	67.0	1886
Georgia.								
Forsyth	65.3	20	66.5	+ 1.2	69.4	1893	61.0	1875
Idaho.								
Boise Barracks	49.9	20	51.0	+ 1.1	56.5	1888	44.2	1883
Fort Sherman	45.8	10	45.4	— 0.4	50.9	1889	41.8	1882
Indiana.								
Lafayette	50.6	14	52.5	+ 1.9	53.9	1886	45.4	1881
Iowa.								
Cresco	43.1	22	48.7	+ 5.6	48.7	1894	37.5	1874
Kansas.								
Eureka Ranch	54.5	11	56.5	+ 2.0	58.6	1888	49.8	1892
Independence	57.6	22	61.2	+ 3.6	61.7	1878	48.3	1874
Louisiana.								
Grand Coteau	69.7	11	72.0	+ 2.3	72.2	1893	68.0	1891
Maine.								
Orono	40.0	23	41.9	+ 1.9	45.1	1889	33.3	1874
Maryland.								
Cumberland	49.1	23	51.0	+ 1.9	57.6	1881	45.0	1874
Michigan.								
Kalamazoo	47.0	17	49.0	+ 2.0	52.9	1878	42.0	1881
Missouri.								
Sedalia	56.5	11	57.5	+ 1.0	61.5	1888	52.7	1885
Montana.								
Fort Custer	45.9	12	47.8	+ 1.9	50.6	1889	41.3	1893

Departures from normal temperature—Continued.

State and station.	(1) Normal for the month of Apr.	(2) Length of record.	(3) Mean for Apr., 1894.	(4) Departure from normal.	(5) Extreme monthly means for April.			
					Highest.	Year.	Lowest.	Year.
Nebraska.	°	Years	°	°	°		°	
Fort Robinson	46.8	10	50.2	+ 3.4	52.8	1888	41.6	1884
Genoa (near)	48.9	18	52.8	+ 3.9	53.0	1890	42.2	1881
Nevada.								
Browns	54.9	23	.....	.....	63.4	1888	46.8	1883
Carson City	48.3	17	48.8	+ 0.5	50.1	1881	43.1	1880
New Hampshire.								
Hanover	41.2	23	45.2	+ 4.0	46.9	1887	33.7	1874
New Mexico.								
Fort Wingate	48.9	23	49.1	+ 0.2	57.3	1881	39.2	1874
New York.								
Cooperstown	40.9	23	43.4	+ 2.5	51.6	1878	33.6	1874
Plattsburg Barracks	41.2	23	44.0	+ 2.8	47.9	1878	33.6	1874
North Carolina.								
Lenoir	55.9	21	56.1	+ 0.2	60.0	1887	42.6	1885
Oklahoma.								
Fort Reno	60.6	10	59.8	− 0.8	64.3	1889	55.8	1884
Fort Sill	61.8	22	64.2	+ 2.4	65.5	1880	53.7	1874
Fort Supply	56.9	15	61.1	+ 4.2	61.6	1888	50.0	1874
Oregon.								
Bandon	49.1	10	49.0	− 0.1	52.5	1889	45.3	1886
Pennsylvania.								
Dyberry	42.2	22	43.8	+ 1.6	49.7	1878	35.0	1874
Grampian	43.4	23	46.0	+ 2.6	52.2	1878	29.0	1875
Wellsboro	43.5	15	41.9	− 1.6	52.2	1886	0.1	1881, 1893
South Carolina.								
Statesburg	62.6	13	63.0	+ 0.4	67.4	1893	60.1	1884
South Dakota.								
Fort Sully	46.6	22	50.4	+ 3.8	55.5	1887	39.2	1875
Texas.								
Austin	70.9	21	.....	.....	75.8	1893	63.1	1874
Silver Falls	62.2	8	.....	.....	66.1	1893	59.4	1886
Utah.								
Terrace	52.5	21	51.8	− 0.7	62.5	1888	45.4	1882
Vermont.								
Strafford	40.6	21	43.6	+ 3.0	48.3	1886	34.9	1874
Virginia.								
Dale Enterprise	53.8	14	50.2	− 3.6	59.1	1886	50.2	1894
Washington.								
Fort Townsend	48.3	20	46.4	− 1.9	52.4	1889	43.5	1893
West Virginia.								
Parkersburg	54.1	13	52.2	− 1.9	64.1	1882	43.0	1885
Wisconsin.								
Madison	44.3	22	47.8	+ 3.4	52.5	1878	37.4	1874
Wyoming.								
Fort Washakie	42.2	11	42.8	+ 0.6	46.6	1889	36.8	1893

YEARS OF HIGHEST MEAN TEMPERATURE FOR APRIL.

The mean temperature for April, 1894, was the highest on record at regular Weather Bureau stations, as shown in the following table, which also gives the highest previous record:

Highest mean temperature for April.

Stations.	Apr., 1894.	Departure from normal.	Highest previous.	
			Temperature.	Year.
Palestine, Tex	70.2	+ 3.7	70.2	1893
Dodge City, Kans	57.6	+ 3.5	56.7	1888
Topeka, Kans	58.5	+ 3.2	56.8	1889
Columbia, Mo	57.3	+ 4.2	56.8	1891
Kansas City, Mo	57.3	+ 2.6	57.0	1890
Des Moines, Iowa	53.0	+ 2.6	52.8	1890
Green Bay, Wis	46.4	+ 4.5	45.7	1889

YEARS OF LOWEST MEAN TEMPERATURE FOR APRIL.

As may easily be anticipated from the preceding section showing that the mean temperature was generally above the average, the record for the month does not show any stations for which the mean temperature was below the normal.

MAXIMUM TEMPERATURE.

The maximum temperatures of the month at regular stations of the Weather Bureau are given in Table I, from which it appears that the highest maxima were: Yuma, Ariz., and San Antonio, Tex., 99; Tucson, Ariz., 91; Fresno, Cal., 92; Red Bluff, Cal., Fort Smith, Ark., and Augusta, Ga., 90.

The lowest maxima were: Woods Holl, Mass., 58; Tatoosh Island, Wash., and Nantucket, Mass., 59; Eastport, Me., and Block Island, R. I., 63; Alpena, Mich., 62; Fort Canby, Wash., 61.

MINIMUM TEMPERATURE.

The lowest temperatures recorded at regular stations of the Weather Bureau are given in Table I, from which the following are selected: The lowest minima were: St. Vincent, Minn., and Escanaba, Mich., 14; Northfield, Vt., and Eastport, Me., 15; Sault Ste. Marie, Mich., 12; Cheyenne, Wyo., 16; Marquette, Mich., 17; Alpena, Mich., 18. The highest minima were: Key West, Fla., 68; Corpus Christi, Tex., Port Eads, La., and Galveston, Tex., 58.

DAILY AND MONTHLY RANGES OF TEMPERATURE.

The greatest daily range of temperature is given for each of the regular Weather Bureau stations in Table I, from which the following are selected:

Greatest daily ranges.—Pueblo, Colo., 48; North Platte, Nebr., 46; Havre, Mont., Yuma and Tucson, Ariz., Northfield, Vt., 45.

Smallest daily ranges.—Key West, Fla., 11; Tatoosh Island, Wash., 12; Corpus Christi, Tex., 14; Port Eads, La., 15.

Monthly ranges.—The extreme monthly ranges may be computed for each Weather Bureau station from the data given in Table I; the following are selected:

Largest monthly ranges.—St. Vincent, Minn., Huron, S. Dak., and Sioux City, Iowa, 63; North Platte, Nebr., 67; Valentine, Nebr., 69; Marquette, Mich., 65.

Smallest monthly ranges.—Key West, Fla., 14; Port Eads, La., 21; Galveston, Tex., and Tatoosh Island, Wash., 22.

DIURNAL PERIODICITY.

The regular diurnal period in temperature is shown by the hourly means given in Table V for all stations having self-registers.

LIMITS OF FREEZING TEMPERATURE.

The southern limit of the region within which the air has had a freezing temperature at some time during the month is shown by full and dotted lines on Chart V, "Total Monthly Snowfall." These lines may be textually described as follows: The line of minimum 32 passes from the coast of Delaware through southern Virginia, eastern Kentucky, southern Indiana, central Illinois, northern Missouri, eastern Kansas, western Oklahoma, northern Texas, central New Mexico, southern Utah, southern Nevada, northern California, central Oregon and Washington. During April, 1894, the line of minimum 40, which corresponds nearly with the limit of hoar frost, passed along the California coast, northern Texas, central Arkansas, central Mississippi, Alabama, Georgia, and South Carolina.

ACCUMULATED TEMPERATURES.

From January 1 to the end of the current month the average temperature for each geographical district was above or below the normal by an amount that is given in the last column of the following table. This average departure from normal temperatures may be used, instead of the simple accumulated temperatures, for comparison with the departure of current crop conditions from the normal condition of vegetation.

Positive.	Departures.		Negative.	Departures.	
	Total.	Average.		Total.	Average.
New England	+ 6.1	+ 1.5	Northern Slope	− 1.5	− 0.4
Middle Atlantic	+ 9.3	+ 2.3	Southern plateau	− 9.4	− 2.4
South Atlantic	+ 7.7	+ 1.9	Middle plateau	− 6.2	− 1.6
Key West	+ 3.0	+ 0.8	Northern Pacific	− 6.2	− 1.6
East Gulf	+ 4.8	+ 1.2	Middle Pacific	− 8.1	− 2.0
West Gulf	+ 3.9	+ 1.0	Southern Pacific	−10.5	− 2.6
Ohio Valley and Tennessee	+ 9.6	+ 2.4			
Lower Lake	+14.5	+ 3.8			
Upper Lake	+17.0	+ 4.2			
North Dakota (Ex. N. W.)	+ 9.8	+ 2.4			
Upper Mississippi	+12.2	+ 3.0			
Missouri Valley	+ 9.2	+ 2.3			
Middle Slope	+ 2.8	+ 0.7			
Southern Slope (Abilene)	+ 3.7	+ 0.9			

PERIODS OF HIGH TEMPERATURE.

The maximum temperatures of the month occurred mostly during the last few days of the month in the central portion of the United States, but during the middle of the month in the Appalachian ranges and the Gulf States. The dates of occurrence may be grouped as follows: On the 1st, at Woods Holl, Mass. 8th, Oklahoma, Okla. 9th, Fort Canby, Wash.; Carson City, Nev.; Jacksonville, Fla. 10th, Eureka, Cal.; Winnemucca, Nev. 15th, Palestine, Tex.; Shreveport, La. 16th, Wichita, Kans.; Fort Smith and Little Rock, Ark.; Meridian and Vicksburg, Miss.; New Orleans, La. 17th, Montgomery, Ala.; Knoxville, Tenn.; Charlotte, N. C. 18th, Tampa, Fla.; Parkersburg, W. Va.; Pittsburg, Pa.; Cleveland, Ohio; Buffalo and Oswego, N. Y. 19th, Portland and Roseburg, Oreg.; Fort Canby, Wash.; Red Bluff, San Francisco, Point Reyes Light, Los Angeles, and San Diego, Cal. 20th, Spokane and Walla Walla, Wash.; Sacramento and Fresno, Cal.; Tucson, Ariz.; Galveston, Tex. 21st, Baker City, Oreg.; Havre, Helena, and Miles City, Mont.; Laramie, Wyo.; Jupiter and Titusville, Fla. 23d, Abilene, Tex.; Rapid City, S. Dak. 24th, San Antonio and Corpus Christi, Tex. 25th, Tatoosh Island, Neah Bay, Port Angeles, Olympia, and Seattle, Wash.; Yuma, Ariz.; Santa Fe, N. Mex.; Salt Lake City, Utah; Idaho Falls, Idaho. 26th, Cheyenne, Wyo.; Denver, Colorado Springs, and Pueblo, Colo.; El Paso, Tex. 27th, Dodge City, Kans.; Key West, Fla.; Cape Henry, Va.; Atlantic City, N. J.; Harrisburg, Pa.; New York and Albany, N. Y.; Boston, Mass.; Eastport, Me.; Sault Ste. Marie, Mich. 28th, Bismarck, N. Dak.; Pierre and Huron, S. Dak.; Valentine, North Platte, and Omaha, Nebr.; Columbia, Kansas City, and Springfield, Mo.: Sioux City, Des Moines, Dubuque, and Davenport, Iowa; Amarillo, Tex.; Indianapolis, Ind.; Cincinnati, Columbus, and Toledo, Ohio; Raleigh, Hatteras, and Kittyhawk, N. C.; Norfolk and Lynchburg, Va.; Washington, D. C.; Baltimore, Md.; Atlantic City, N. J.; Philadelphia, Pa.; New London and New Haven, Conn.; Block Island and Narragansett Pier, R. I.; Woods Holl and Nantucket, Mass.; Portland, Me. 29th, Williston, N. Dak.; St. Vincent, Moorhead, St. Paul, and Minneapolis, Minn.; La Crosse, Wis.; Keokuk, Iowa; Hannibal, Columbia, and St. Louis, Mo.; Springfield and Cairo, Ill.; Memphis, Knoxville, and Chattanooga, Tenn.; Atlanta, Augusta, and Savannah, Ga.; Charleston and Columbia, S. C.; Wilmington and Southport, N. C. 30th, Duluth, Minn.; Green Bay and Milwaukee, Wis.; Chicago, Ill.; Marquette, Grand Haven, Alpena, Port Huron, and Detroit, Mich.; Sandusky, Ohio; Rochester, N, Y.

It will be seen that, in general, these dates of high temperature group themselves so as to show the southward and eastward movement of the areas of high temperature as they pass over the Rocky Mountains into the Mississippi Valley, after which their movement is more likely to be northeastward.

AREAS OF 20° RISE IN TWENTY-FOUR HOURS.

The daily weather charts show by heavy dotted lines the regions over which the temperature has risen 20° in the preceding twenty-four hours. The following is a list of these areas:

(A) 1st, a. m., 100 by 200, eastern Tennessee.

(B) 1st, a. m., 600 by 300, Maine and New Brunswick.

(C) 3d, a. m., 400 by ——, Lake Superior. 3d, p. m, 150 by 150, Lake Erie. 4th, a. m., 100 by 150, Ohio, and 150 by 250, Ontario.

(D) 7th, a. m., 150 by 200, Saskatchewan.

(E) 14th, p. m., 600 by 300, Colorado, New Mexico, western Kansas, and Texas.

PERIODS OF LOW TEMPERATURE.

The lowest temperatures of the month occurred during the first few days in the Lake region and New England, but during the middle of the month at southern stations, and during the last part of the month in California, and generally show a tendency on the part of areas of abnormal low temperature to move southward and eastward. The dates of occurrence may be arranged as follows:

1st, St. Vincent, Moorhead, Duluth, St. Paul, and Minneapolis, Minn.; Davenport, Des Moines, and Sioux City, Iowa; Amarillo, Tex.; Pierre, S. Dak.; and Key West, Fla. 2d, La Crosse, Wis.; Marquette, Escanaba, and Sault Ste. Marie, Mich.; Green Bay, Wis.; Alpena, Mich.; Dubuque, Iowa; Milwaukee, Wis.; Grand Haven, Mich.; Keokuk, Iowa; Port Huron and Detroit, Mich.; Toledo, Ohio; Indianapolis, Ind.; Cincinnati, Ohio; Oswego, N. Y. 3d, Montgomery, Ala.; Lexington, Ky.; Chattanooga, Tenn.; Raleigh, N. C.; Lynchburg, Va.; Parkersburg, W. Va.; Washington, D. C.; Baltimore, Md.; Harrisburg and Philadelphia, Pa.; Atlantic City and New Brunswick, N. J.; New York, N. Y.; Sandusky and Cleveland, Ohio; Erie, Pa.; Buffalo, Rochester, and Albany, N. Y.; Northfield, Vt.; New Haven and New London, Conn.; Block Island and Narragansett Pier, R. I.; Woods Holl, Nantucket, and Boston, Mass.; Portland and Eastport, Me. 4th, Denver and Pueblo, Colo.; Dodge City, Kans. 5th, Valentine, Nebr.; Wichita and Topeka, Kans.; Omaha, Nebr.; Lander and Cheyenne, Wyo. 6th, Hannibal, Mo.; New Orleans, La.; Mobile, Ala.; Louisville, Ky. 7th, Tampa, Fla.; Meridian, Miss. 9th, Idaho Falls, Idaho; Rapid City, S. Dak.; Colorado Springs, Colo.; Bismarck, N. Dak.; North Platte, Nebr.; Chicago, Ill.; Columbus, Ohio; Pittsburg, Pa.; Santa Fe, N. Mex.

10th, San Antonio, Palestine, Corpus Christi, and Galveston, Tex.; Shreveport, La.; Vicksburg, Miss.; Little Rock, Ark.; Cairo, Ill.; Fort Smith, Ark.; Oklahoma, Okla.; Columbia, Mo.; Huron, S. Dak.; Minneapolis, Minn. 11th, St. Louis, Kansas City, and Columbia, Mo.; Port Eads, La.; Pensacola, Fla.; Norfolk, Va. 12th, Havre, Mont.; Williston, N. Dak.; Springfield, Ill.; Memphis and Nashville, Tenn.; Atlanta, Ga.; Columbia, S. C.; Jupiter, Fla.; Charlotte, Hatteras, and Kittyhawk, N. C. 13th, Knoxville, Tenn.; Augusta, Ga.; Titusville and Jacksonville, Fla.; Savannah, Ga.; Charleston, S. C.; Southport and Wilmington, N. C.; Cape Henry, Va. 15th, Fort Canby, Wash.; Astoria, Oreg. 16th, Olympia and Portland, Oreg.; Walla Walla and Spokane, Wash.; Salt Lake City, Utah. 17th, Helena, Mont.; Baker City and Roseburg, Oreg.; Eureka, Cal.; Carson City, Nev. 18th, Yuma and Tucson, Ariz.; El Paso, Tex. 22d, Tatoosh Island, Neah Bay, East Clallam, and Port Angeles, Wash. 27th, Red Bluff, Sacramento, and San Francisco, Cal. 28th, Fresno and Los Angeles, Cal. 29th, San Diego, Cal.

A consideration of the dates and locations of these minimum temperatures of the month must lead to the conclusion that they represent the combined effect of both nocturnal radiation and the advance eastward or southward of areas of high pressure and low temperature. The forward advance of cold air is the prime factor and the formation of clouds with rain, which takes place in front of high areas, is the secondary factor that introduces irregular modifications of what would otherwise be definite fronts of cold waves. It is in this way that the low temperatures of the 2d came to be irregularly distributed south of the Ohio Valley while they advanced eastward bodily over New England in connection with high area No. II; again, it was in this way that the low temperature of the 27th to the 30th spread over California with but little interruption, whereas, the northward extension into Washington and Oregon produced too much rain and cloud to bring about the minimum temperatures of the month.

AREAS OF 20° FALL IN TWENTY-FOUR HOURS.

A fall of temperature of 20°, or more, in twenty-four hours is

not called a cold wave by the Weather Bureau unless the temperature falls below 40°, and is, therefore, likely to cause a frost injurious to vegetation, but all falls of 20° are indicated on the Daily Weather Map by inclosing the areas within which they occur by heavy dotted lines, and the following list enumerates these regions for the month of April. An approximate idea of the size of the area covered is given by stating in miles the lengths of the two principal dimensions when these can be given; one of these is necessarily omitted when the area extends beyond the region covered by the Weather Map. The falls of 20° in twenty-four hours may be divided into two classes: (1) those due to the local radiation consequent upon the clearing away of cloudy skies; (2) those due to the advent of cold winds attending the progress of an area of high pressure; such winds are more severe on the south and east sides of areas of high pressure, but the temperatures are often a little lower in other portions of the area. The injuries to delicate plants and the unpleasant harshness to human beings are often due to the dryness as much as to the coldness, in which respects the effects of the dry, cold, northeast winds that penetrate the mild climate of California resemble the dry, hot, westerly winds of the summer season in Kansas and Texas.

(A) 1st, p. m., 100 by 200 in New York.

(B) 2d, a. m., 1,000 by 300 in Ontario, Quebec, Vermont, Maine, New Brunswick. 2d, p. m., 200 by 100 in New York, New Jersey, and Connecticut.

(C) 3d, a. m., 500 by 300 in Idaho, Wyoming, and Utah.

(D) 5th, p. m., 200 by 100 in West Virginia and Pennsylvania.

(E) 7th, p. m., 300 by 200 in Alberta, Montana, Idaho. 8th, a. m., 200 by 200 in Alberta, Saskatchewan. 8th, p. m., 700 by 400 in South Dakota, Nebraska, Colorado, Oklahoma. 9th, a. m., 600 by 300 in Nebraska, Kansas, Colorado. 9th, p. m., 200 by 100 in Missouri and Arkansas.

(F) 11th, p. m., 1,200 by 300 in Alberta, Montana, Idaho, Utah, Nevada. 12th, p. m., 500 by 300 in Nebraska, Kansas, Colorado. 13th, p. m., 300 by 200 in northern Texas.

(G) 17th, p. m., 600 by 300 in Nebraska, Colorado, and New Mexico.

(H) 19th, p. m., 300 by 300 in Wisconsin, Minnesota, Iowa, and Nebraska.

(I) 26th, p. m., 600 by 300 in Washington, Oregon, Montana, and Idaho.

(J) 29th, 8 a. m., 200 by 100 in Vermont, New Hampshire, and Maine.

TEMPERATURE AS AFFECTING AGRICULTURE.

The following records of agricultural conditions are taken from newspaper summaries and the official reports of the State Weather Services:

Arkansas.—The weather was rather too cool for the rapid germination of seeds and growth of vegetation, and too wet generally for plowing and planting to progress as rapidly as was desired. However, at the close of the month about all early corn and a majority of the cotton were planted and both were coming up to a good stand. Wheat, oats, gardens, and pastures were all doing well, and stock was in good condition on the range.

Iowa.—The month will rank as one of the most favorable Aprils for farming operations and crop growth ever known in this region. The daily mean temperature was about 3° below the normal.

Indiana.—The conditions of the weather during the month were exceedingly favorable and beneficial to all vegetation, but especially to the growing crops, which, apparently, had been injured by the very sudden cold weather in the latter part of March; the very favorable weather during April revived and advanced everything and put it in good growing condition; plowing and planting of corn had advanced much at the end of the month, more so than for many years; in fact by appearances at the end of April all crops, except some fruits, were in a most promising condition.

Kentucky.—The highly unfavorable weather conditions during the early part of the month prevented rapid farm work. Corn planting was in progress only to a very limited extent by the 10th of the month. Wheat, except the more advanced fields, suffered little from the cool weather, but oats and clover were seriously injured. Most of the fruit trees and gardens were very badly damaged. At the close of the month the crop conditions may be summed up as follows: About two-thirds of the corn crop had been planted under very favorable conditions. The wheat crop was in a highly promising condition; indeed, the outlook for this crop has not for several years been more promising at this season of the year. Rye and grasses were in good condition, but clover was reported very poor. The oat crop, excepting that part planted after the March freeze, was in poor condition, and many fields had been plowed up for corn. Tobacco plants suffered greatly from the March freeze, and many beds had to be resown.

Michigan.—Temperature and rainfall were both favorable during the month, and the growing wheat made fairly good progress.

Missouri.—Throughout nearly the entire month the weather was very favorable for farm work, but from the 1st to the 23d was too cool and, in some sections, too dry for vegetation to make any material advancement, and grass and small grains were slow in recovering from the effects of the severe freezing weather of the last decade of March. Frosts were of frequent occurrence up to the 23d, but did no serious damage.

New England.—The month was generally favorable for farm work and the growth of vegetation, and the end of the month found the season nearly two weeks ahead of the average; grass was in splendid shape, except in a few localities where lack of rain was felt; plowing had begun in the north, and in a few instances grain had been sown and gardens and early vegetables planted, and in the south plums and cherries were rapidly coming into blossom; early vegetables were coming up; asparagus and rhubarb were ready for market.

Nevada.—All farming operations were put back by the cold weather; plowing and seeding were from two to three weeks later than usual. Grass was good after the middle of the month, and there promises to be a large hay crop. Stock have done very well, although losses from scarcity of feed were reported from the northwestern portion of Nye County. The outlook for fruit is not at all encouraging, the freezing weather during the last of the month killing a great deal in nearly all sections of the State. Near Dayton the cold was so intense as to kill even the hardier small fruits, such as currants, etc. The agricultural valleys in the southern part of the State have so far remained untouched, and from all appearances the fruit crop will be about the same as last year, with a probability of a slight increase over the total yield.

Ohio.—For the week ending April 28, in the northern section, farm work has progressed rapidly; potatoes planted, in good condition; corn will be planted next week; wheat, oats, and grass doing well; fruit is blossoming and improving; meadows looking fine. Middle section: all crops make fair progress, slightly retarded by coolness and dryness, early potatoes are already up; apples, pears, cherries, and strawberries in bloom. Southern section: wheat, oats, grass, and pasture are looking finely; early potatoes growing rapidly; conditions of air and soil very favorable for planting corn; rye is beginning to head; strawberries in full bloom; peach bloom is very light.

South Carolina.—The month has been a fairly good one for agricultural purposes, although not remarkably so.

Tennessee.—The general meteorological conditions for the month were but little at variance with the normal. Crops were in very bad condition at the beginning of the month, many of them having been entirely killed and all more or less injured by the cold weather in March; farm work was also several weeks late, but the favorable conditions which prevailed during the greater portion of April have brought out vegetation and allowed farm work to advance rapidly, so that at the close of the month the outlook is favorable for a fairly good yield of everything, except peaches, pears, and apples.

Wisconsin.—The high temperature and liberal showers have proven very beneficial to farmers. A large amount of spring work was done during the month, and grain which was sown is coming up in excellent shape. The weather was not severe enough at any time during the month to cause material injury to grain, and a very prosperous season seems assured.

PRECIPITATION.

[*In inches and hundredths.*]

The distribution of precipitation over the United States and Canada for the month of April, 1894, as determined by reports from about 2,000 stations, is exhibited on Chart III. In Tables I, II, and III, the total precipitation is given for each station; the departures from the normal are given for regular stations of the Weather Bureau in Table I. The figures opposite the names of the geographical districts in the columns for precipitation and departure from the normal show, respectively, the averages for the several districts. The normal for any district may be found by adding the departure to the

current mean when the precipitation is below the normal and subtracting when above. The average departure for each State is given in the chapter of reports from the State Weather Services.

NORMAL PRECIPITATION FOR APRIL.

The normal precipitation for the month of April is from 1 to 2 over the Rocky Mountain plateau region, about 2 in California, increasing as we go northward to 10 on the coast of Washington. It is from 4 to 6 in the south Atlantic and Gulf States, increasing as we go inward to 8 in the lower Mississippi, whence it diminishes toward the north and west.

PRECIPITATION FOR CURRENT MONTH.

The total precipitation for April, 1894, exceeded 10 over a small region near the coasts of Oregon and Washington; it was generally less than 1 in southern California, Arizona, and Texas; a maximum of 8 to 12 fell over a small portion of northern Arkansas, and at one station each in Texas and Pennsylvania. Six cases of very heavy rainfall in twenty-four hours, due to the so-called cloud-bursts, occurred in Texas on the 29th and 30th of this month and one similar case occurred at Somerset, Pa.. also on the 29th.

CURRENT DEPARTURES FROM NORMAL PRECIPITATION.

The precipitation for April was most decidedly in excess of the normal in the northwestern corner of Washington, being 9.9 at Tatoosh Island and 10.4 at Neah Bay; it was also 3.2 at Astoria, Oreg., but throughout the rest of the State only a slight excess above the normal was recorded. The principal region of excess covered Wisconsin, Minnesota, Manitoba, North Dakota, South Dakota, and eastern Montana; regions of local excesses occurred in Arkansas, southern Texas, Pennsylvania, Maryland, eastern Massachusetts, and Nova Scotia. The regions of deficit covered California, the south Atlantic States, and central Texas. The principal excesses were: Duluth, Minn., 3.6; St. Vincent, Minn., 3.1; Corpus Christi, Tex., 3.5; Memphis, Tenn., 2.9. The principal deficits were: Sacramento, Cal., 2.4; Abilene, Tex., and Savannah, Ga., 3.2; Charleston, S. C., 3.5; Hatteras and Kittyhawk, N. C., 3.8.

The following table shows for certain stations, as reported by voluntary observers, (1) the normal precipitation for April for a series of years; (2) the length of record during which the observations have been taken and from which the normal has been computed; (3) the total precipitation for April, 1894; (4) the departure of the current month from the normal; (5) the extreme monthly values so far as recorded, for April, and the years of their occurrence:

State and station.	(1) Average for the month of April.	(2) Length of record.	(3) Total for April, 1894.	(4) Departure from average.	(5) Extremes for April.			
					Greatest.		Least.	
					Am't.	Year.	Am't.	Year.
Arizona.	*Inches.*	*Years*	*Inches.*	*Inches.*	*Inches.*		*Inches*	
Fort Apache	0.82	18	0.19	— 0.63	1.77	1878	0.00	1893
Fort Mohave	0.37	23	.....	.....	4.05	1871	0.00	1880, '83
Whipple Barracks	1.56	22	0.00	— 1.56	2.86	1878	0.00	1893, '94
Arkansas.								
Keesees Ferry	4.48	12	3.85	— 0.63	8.33	1893	1.57	1889
California.								
Riverside	0.94	13	0.03	— 0.91	2.15	1885	0.03	1894
Colorado.								
Las Animas	1.26	12	0.07	— 1.19	2.64	1886	0.01	1893
Florida.								
Merritts Island	3.81	16	0.22	— 3.59	9.74	1878	0.22	1894
Georgia.								
Forsyth	3.88	20	1.86	— 2.02	9.59	1883	0.55	1888, '92
Idaho.								
Boise Barracks	1.63	20	1.26	— 0.37	2.43	1886	0.00	1890
Fort Sherman	1.90	10	2.50	+ 0.60	4.75	1893	0.00	1885
Indiana.								
Lafayette	3.65	14	2.56	— 1.09	7.51	1892	0.84	1889
Iowa.								
Cresco	2.48	22	3.21	+ 0.73	5.95	1893	1.11	1883
Kansas.								
Independence	3.90	22	4.98	+ 1.08	6.68	1889	1.64	1883
Louisiana.								
Grand Coteau	4.26	11	5.02	+ 0.76	10.64	1890	0.87	1891

Departures from average precipitation—Continued.

State and station.	(1) Average for the month of April.	(2) Length of record.	(3) Total for April, 1894.	(4) Departure from average.	(5) Extremes for April.			
					Greatest.		Least.	
					Am't.	Year.	Am't.	Year.
Maine.	*Inches.*	*Years*	*Inches.*	*Inches.*	*Inches.*		*Inches*	
Orono	2.80	23	1.18	— 1.67	5.08	1887	1.12	1892
Maryland.								
Cumberland	2.41	22	2.41	0.00	6.50	1874	0.60	1879
Michigan.								
Kalamazoo	2.72	18	2.35	— 0.37	8.00	1880	0.92	1876
Missouri.								
Sedalia	3.69	15	3.43	— 0.26	10.06	1893	1.33	1888
Montana.								
Fort Custer	1.06	13	1.52	+ 0.46	2.16	1887	0.51	1885
Nebraska.								
Fort Robinson	1.84	10	2.86	+ 1.02	3.93	1892	0.47	1886
Genoa (near)	2.80	18	1.93	— 0.87	5.32	1885	1.20	1878
Nevada.								
Browns	0.46	23	.....	.....	1.47	1878	0.00	*
Carson City	0.93	17	0.27	— 0.66	5.02	1880	0.03	1889
New Hampshire.								
Hanover	2.31	23	1.71	— 0.60	3.40	1874	0.38	1872
New Mexico.								
Fort Wingate	0.88	23	0.80	— 0.08	2.70	1877	0.00	1893
New York.								
Cooperstown	2.88	23	2.54	— 0.34	4.10	1874	0.98	1881
Plattsburg Barracks	1.64	23	1.14	— 0.50	3.98	1871	0.30	1881
North Carolina.								
Lenoir	3.52	22	1.99	— 1.53	7.80	1874	1.30	1876, '85
Oklahoma.								
Fort Reno	2.29	11	3.30	+ 1.01	6.02	1890	0.89	1887
Fort Sill	2.76	22	4.09	+ 1.33	8.77	1890	0.37	1893
Fort Supply	2.42	15	4.36	+ 1.94	8.60	1885	0.25	1893
Oregon.								
Bandon	5.46	16	5.69	+ 0.23	13.36	1893	0.97	1885
Pennsylvania.								
Dyberry	2.50	22	2.51	+ 0.01	5.07	1874	0.80	1882
Grampian	3.46	23	2.98	— 0.48	6.11	1874	1.35	1870
Wellsboro	4.47	15	8.69	+ 4.22	10.77	1886	0.61	1892
South Carolina.								
Statesburg	2.10	13	1.42	— 0.68	4.17	1883	0.65	1893
South Dakota.								
Fort Sully	2.15	23	1.55	— 0.60	4.82	1892	0.14	1884
Texas.								
Austin	3.46	21	.....	.....	7.78	1884	T.	1887
Silver Falls	2.31	8	.....	.....	4.58	1891	0.00	1892
Utah.								
Terrace	0.39	21	T.	— 0.39	1.74	1884	0.00	*
Vermont.								
Strafford	2.62	21	1.40	— 1.22	12.20	1874	0.60	1873, '81
Virginia.								
Dale Enterprise	3.55	14	1.60	— 1.95	7.13	1882	0.75	1881
Washington.								
Fort Townsend	1.76	18	2.36	+ 0.60	3.74	1893	0.38	1877
West Virginia.								
Parkersburg	3.47	9	3.98	+ 0.51	5.13	1893	2.20	1891
Wisconsin.								
Madison	4.38	21	2.81	— 1.57	5.48	1880	0.96	1887
Wyoming.								
Fort Washakie	1.75	11	0.92	— 0.83	3.73	1883	0.51	1888

*Frequently.

Considered by districts the precipitation for April, 1894, when compared with the normal for the month, furnishes the departures given in Table I, as expressed in inches, and also the corresponding following percentages, as found by dividing those departures by the normal precipitation for April (precipitation is in excess when the percentage of the normal exceeds 100):

Deficits: New England States, 88; middle Atlantic States, 71; south Atlantic States, 34; Key West, Fla., 2; East Gulf States, 66; Ohio Valley and Tennessee, 88; lower Lake region, 78; upper Missouri Valley, 96; middle slope, 91; southern slope, 28; middle plateau (Abilene, Tex.), 70; middle Pacific coast, 39; southern Pacific coast, 8.

Excesses: West Gulf States, 112; upper Lake region, 112; North Dakota, or the extreme northwest, 199; northern slope, 143; southern plateau, 100; northern plateau, 114; north Pacific, 179.

ACCUMULATED PRECIPITATION.

The total accumulated precipitation from the beginning of the year to the end of April was decidedly in excess of the normal in North Dakota, the northern slope, the northern plateau, and north Pacific regions; it was especially deficient in the southern Pacific, the southern slope, the Key West and south Atlantic regions. In detail the accumulated precip-

itation, as compared with the normal values, furnishes the following amounts and percentages:

Districts.	Deficits.		Districts.	Excesses.	
	Amt.	Per cent.		Amt.	Per cent.
New England	4.20	73	East Gulf	0.20	101
Middle Atlantic	3.70	74	West Gulf	0.40	103
South Atlantic	5.40	67	North Dakota (Ex. N. W.)	2.20	161
Key West	3.90	38	Northern slope	1.30	140
Ohio Valley and Tennessee	2.10	88	Northern plateau	4.00	155
Lower Lake	1.90	82	North Pacific	10.70	141
Upper Mississippi	0.30	96			
Missouri Valley	0.10	98			
Middle Slope	0.80	82			
Abilene	3.20	60			
Southern plateau	0.50	75			
Middle plateau	0.60	89			
Middle Pacific	2.30	86			
South Pacific	4.70	38			
Upper Lake	0.00	100			

YEARS OF GREATEST PRECIPITATION FOR APRIL.

The precipitation for the current month was the greatest on record for the month of April at the stations shown in the following table:

Station.	Current precipitation.		Previous maximum.	
	Amount.	Departure.	Amount.	Year.
Neah Bay, Wash	15.57	+10.4	14.02	1893
Tatoosh Island, Wash	14.59	+ 9.9	13.03	1893
Rapid City, S. Dak	4.24	+ 2.2	4.22	1889
St. Vincent, Minn	4.42	+ 3.1	2.85	* 1885
Duluth, Minn	5.85	+ 3.6	5.18	1878
Corpus Christi, Tex	5.10	+ 3.5	2.14	1891
Vineyard Haven, Mass	4.74	+ 2.2	4.30	1893

YEARS OF LEAST PRECIPITATION FOR APRIL.

The precipitation for the current month was the least on record for the month of April at the stations shown in the following table:

Station.	Current precipitation.		Previous minimum.	
	Amount.	Departure.	Amount.	Year.
Fresno, Cal	0.10	−1.2	0.17	1890
Yuma, Ariz	0.00	−0.1	0.00	Frequently.
Colorado Springs, Colo	0.25	−1.6	0.70	1875
Kansas City, Mo	2.51	−0.7	2.61	1890
Narragansett Pier, R.I	2.47	−0.8	2.56	?
Wilmington, N.C	0.78	−2.4	0.97	1872
Titusville, Fla	0.17	−2.3	0.76	1890

EXCESSIVE PRECIPITATION.

The following tables for April, 1894, show, by States, the number of stations reporting total precipitation during this month to equal or exceed 10.00 inches, 2.50 in 24 hours, and 1.00 in 1 hour:

Monthly precipitation to equal or exceed 10.00.

State.	Number of stations.	State.	Number of stations.
Arkansas	4	Pennsylvania	1
Washington	3	Texas	1

Daily precipitation to equal or exceed 2.50 *in* 24 *hours.*

State.	Number of stations.	Dates.	State.	Number of stations.	Dates.
Texas	21	6-7, 13, 28-29, 29, 29-30, 30.*	Oklahoma	4	13, 13-14, 17-18, 28-29.
Arkansas	13	3, 9, 9-10, 17, 18, 29-30, 30.	Louisiana	3	22-23, 24-25.
Tennessee	5	9-10, 18-19.	Pennsylvania	3	10-11, 22-23, 29.
Georgia	4	19-20, 20, 24.	Alabama	2	4, 19.
			Maryland	2	10-11, 11-12.

Daily precipitation—Continued.

State.	Number of stations.	Dates.	State.	Number of stations.	Dates.
New Jersey	2	10-11.	Kentucky	1	19.
South Carolina	2	18-19.	Missouri	1	8.
California	1	26.	Virginia	1	10.
Indian Territory	1	30.	Washington	1	8-9, 9.
Iowa	1	18.			

*April 30-May 1.

Hourly precipitation to equal or exceed 1.00.

Louisiana	7	4, 14, 24, 25.	Arkansas	2	18.
Texas	6	3, 6, 13, 18.	Kansas	2	23, 25.
Alabama	3	19.	Georgia	1	28.
Mississippi	3	9, 14, 17.	Indian Territory	1	8.
South Carolina	3	18, 19.	Iowa	1	28.
Tennessee	3	1, 17, 18.			

Excessive precipitation, April, 1894.

State and station.	Monthly rainfall 10 inches, or more.	Rainfall 2.50 inches, or more, in 24 hours.		Rainfall 1 inch, or more, in one hour.		
		Amt.	Day.	Amt.	Time.	Day.
Alabama.	*Inches.*	*Inches.*		*Inches*	*h. m.*	
Eufaulaa				1.40	0 50	19
Evergreen		2.85	19			
Newton		2.85	4	1.61	1 00	19
Oxanna				1.50	1 00	19
Arkansas.						
Ashdown		3.13	29-30			
Cassville		2.89	30			
Dallas		2.94	30			
Fort Smith		2.54	29-30			
Helenab		2.93	9-10			
Hot Springs b		4.00	30			
Hot Springs (near)	10.44	4.63	30			
Kirby	11.25	3.45	29-30			
Madding		2.75	9			
Do		2.50	18	1.87	0 45	18
Mount Nebo		3.00	30			
Ozark	10.49	2.96	30			
Prescott				1.00	0 35	18
Stuttgart		2.53	3			
Washington	12.73	2.79	17			
Do		4.57	30			
California.						
Shasta Springs		2.55	26			
Georgia.						
Alapaha		2.65	19-20			
Bainbridge		2.88	19-20			
Fleming				1.18	1 00	28
Morgan		2.88	20			
Piscola		2.60	24			
Indian Territory.						
Eufaula		3.65	30			
Gwenndale				2.35	2 00	8
Iowa.						
Humboldt		2.70	18			
Keosauqua				2.43	1 00	28
Kansas.						
Oberlin				1.35	0 45	25
Wa Keeney				1.00	0 55	23
Kentucky.						
Princeton		2.54	19			
Louisiana.						
Farmerville		3.00	22-23			
Hammond				1.35	1 00	4
Houma				1.35	0 25	25
Lafayette				1.20	1 00	24
Lawrence		4.50	24-25			
Melville				1.50	0 31	14
New Orleans				2.18	0 55	24
Sugar Experimental Station		2.65	24-25	2.05	0 45	24
Thibodeaux				1.00	1 00	24
Maryland.						
Fenby		3.30	10-11			
Woodstock		2.70	11-12			
Mississippi.						
Bay St. Louis				2.00	2 00	14
Meridian				1.00	0 40	9
Do				2.00	1 15	17
Missouri.						
Eight Mile		2.49	8			
New Jersey.						
Freehold		2.65	10-11			
Hightstown		2.54	10-11			
Oklahoma.						
Alva		3.01	13-14			
Burnett		2.59	13			
Ponca		2.85	17-18			
Winnview		4.05	28-29			
Pennsylvania.						
Selins Grove		3.37	10-11			
Somerset	10.00	5.95	29			
Wellsboro		3.65	22-23			

Excessive precipitation—Continued.

State and station.	Monthly rainfall 10 inches, or more.	Rainfall 2.50 inches, or more, in 24 hours.		Rainfall of 1 inch, or more, in one hour.		
		Amt.	Day.	Amt.	Time.	Day.
South Carolina.	*Inches.*	*Inches.*		*Inches.*	*h. m.*	
Cheraw *a*		3.41	18-19	1.14	0 40	18
Cheraw *b*		3.88	18-19			
McCormick				1.03	1 00	19
Santuck				1.00	0 55	18
Tennessee.						
Arlington		3.25	18-19			
Byrdstown				1.17	1 00	1
Clarksville				1.25	0 20	17
Covington *a*		2.95	18-19			
Covington *b*		2.80	18-19			
Memphis		2.61	9-10			
Do		3.29	18-19	1.10	0 56	18
Trenton		2.84	18-19			
Texas.						
Arthur City		5.85	29			
Belton		2.85	13	2.85	1 20	13
Boerne		4.20	28-29			
Brazoria		5.30	*			
Burnet		5.45	29-30			
Childress		3.19	13			
Columbia		5.00	*			
Corpus Christi		4.06	6-7	4.00	4 00	6
Corsicana *b*		4.52	29-30			
Dallas		3.71	29-30			
Duval		4.75	29			
Fort Clark		2.50	29	1.05	1 00	18
Fredericksburg	10.34	4.52	29-30	1.00	0 30	3
Do				1.29	1 00	6
Luling		4.30	13	4.30	1 40	13
McGregor		3.10	29			
Palestine		4.22	29-30			
Paris		6.92	29-30			
Sugar Land		2.53	30			
Sulphur Springs		6.43	29-30			
Temple		4.10	28-29			
Waco		6.55	29-30			
Virginia.						
Birdsnest		2.90	10			
Washington.						
Blaine		2.60	9			
Lapush	12.72	2.85	9			
Neah Bay	15.57	3.86	8-9			
Tatoosh Island	14.59	3.77	8-9			

Excessive precipitation received too late for publication in March, 1894.

Oregon.						
Vernonia	12.79					
Texas.						
Haskell				1.24	1 00	11
Sulphur Springs		3.00	4-5			

* April 30-May 1.

MAXIMUM RAINFALL IN ONE HOUR OR LESS.

The following table gives a record of the heaviest rainfall during April, 1894, for periods of five, ten, and sixty minutes, as reported by regular stations of the Weather Bureau furnished with self-registering rain gauges. This record refers strictly to rainfall. About 37 stations are furnished with the self-registering float rain gauge and 6 with the self-registering, weighing, rain and snow gauge. The float gauge does not record snowfall, and the occasional interruption of both forms of self-registers, by snow and ice, partly explains the occurrence of incomplete records.

Maximum rainfall in one hour or less.

Station.	Maximum rainfall in—					
	5 min.	Date.	10 min.	Date.	1 hour.	Date.
	Inch.		*Inch.*		*Inch.*	
Atlanta, Ga.*	0.07	19	0.12	19	0.31	19
Baltimore, Md.	0.11	28	0.15	28	0.35	28
Bismarck, N. Dak.	0.07	27	0.12	27	0.57	27
Boston, Mass.	0.02	4	0.03	4	0.14	8
Buffalo, N. Y.	0.04	20	0.05	20	0.15	20
Cincinnati, Ohio	0.02	20	0.04	20	0.14	20
Chicago, Ill.*	0.11	27	0.11	27	0.25	10
Cleveland, Ohio	0.07	19	0.10	19	0.24	28
Denver, Colo	0.04	30	0.07	30	0.21	30
Detroit, Mich.*	0.04	10	0.08	10	0.30	10
Dodge City, Kans	0.09	12	0.09	12	0.30	12-13
Duluth, Minn	0.05	19	0.09	19	0.34	17
Eastport, Me	0.02	22	0.03	22	0.07	22
Galveston, Tex	0.25	9	0.30	9	0.56	30
Indianapolis, Ind.	0.09	29	0.19	29	0.35	19

Maximum rainfall in one hour or less—Continued.

Station.	Maximum fall in—					
	5 min.	Date.	10 min.	Date.	1 hour.	Date.
	Inch.		*Inch.*		*Inch.*	
Jacksonville, Fla.	0.20	20	0.22	20	0.53	20
Jupiter, Fla.	0.25	3	0.26	3	0.40	3
Kansas City, Mo.	0.10	20	0.17	20	0.43	6
Key West, Fla.†						
Memphis, Tenn.	0.30	18	0.45	18	1.10	18
Milwaukee, Wis.*	0.10	30	0.15	30	0.34	30
Nantucket, Mass.	0.05	5	0.10	5	0.33	5
Nashville, Tenn.	0.13	9	0.17	9	0.43	4
New Orleans, La.*	0.21	24	0.42	24	2.18	24
New York, N. Y.	0.07	21	0.08	21	0.21	21
Norfolk, Va.	0.12	21	0.19	21	0.51	21
Omaha, Nebr	0.06	8	0.10	8	0.44	8
Philadelphia, Pa.*	0.06	21	0.08	21	0.25	21
Portland, Me.*	0.05	22	0.08	22	0.16	22
Rochester, N. Y.	0.07	19	0.10	19	0.17	11
St. Louis, Mo.*	0.06	8	0.11	8	0.37	18
St. Paul, Minn.*	0.13	29	0.26	29	0.64	29
Salt Lake City, Utah*	0.06	16	0.07	16	0.14	16
San Diego, Cal.	T.	27	0.01	27	0.06	27
San Francisco, Cal.	0.01	26	0.02	26	0.12	26
Savannah, Ga.	0.07	4	0.14	4	0.54	4
Seattle, Wash	0.06	26	0.09	26	0.28	26
Vicksburg, Miss.	0.15	9	0.28	9	0.70	24
Washington, D. C.*	0.17	20	0.25	20	0.37	20
Wilmington, N. C.	0.10	4	0.11	4	0.20	4

* Record incomplete. † Less than 0.05 in one hour.

FREQUENCY OF HEAVY PRECIPITATION SINCE 1871.

The following tables show the number of years for which monthly precipitation to equal or exceed 10.00 inches, daily precipitation to equal or exceed 2.50 inches, and hourly precipitation to equal or exceed 1.00 inch has been reported at any station in the several States and Territories for April during the last 24 years:

Frequency of excessive monthly precipitation.

State.	No. years noted.	State.	No. years noted.
Louisiana	17	New Jersey	2
Mississippi	11	Ohio	2
Arkansas	11	South Carolina	2
North Carolina	8	Missouri	2
Alabama	8	Pennsylvania	2
Tennessee	7	Washington	1
Texas	7	Colorado	1
Georgia	5	Connecticut	1
Illinois	4	Indian Territory	1
Indiana	4	Massachusetts	1
Kansas	3	Michigan	1
Virginia	3	Nebraska	1
Kentucky	3	New York	1
Oregon	3	Vermont	1
Florida	2	Wisconsin	1
Maryland	2	California	1
New Hampshire	2		

Frequency of excessive daily precipitation.

Louisiana	17	Maryland	5
Texas	17	South Carolina	5
Alabama	16	Pennsylvania	4
Arkansas	16	Connecticut	3
Georgia	16	New York	3
Tennessee	16	Minnesota	3
Mississippi	14	Oregon	3
North Carolina	14	Colorado	2
Florida	11	Massachusetts	2
Kansas	11	Vermont	2
The Dakotas	10	Wisconsin	2
Illinois	10	Ohio	2
Indian Territory	10	New Jersey	2
Indiana	9	Washington	2
Kentucky	8	Maine	1
Missouri	8	Michigan	1
Iowa	7	Montana	1
Nebraska	6	New Mexico	1
California	6	Rhode Island	1
Virginia	6	Wyoming	1

Frequency of excessive hourly precipitation.

Texas	12	North Carolina	4
Arkansas	7	Louisiana	4
Florida	5	Alabama	4
Illinois	5	Georgia	4
Kansas	5	Mississippi	4
Tennessee	5	Missouri	3
Iowa	5	South Carolina	3

Frequency of excessive hourly precipitation—Continued.

State.	No. years noted.	State.	No. years noted.
The Dakotas	2	New Jersey	1
Nebraska	2	New Mexico	1
Indian Territory	2	Ohio	1
Maryland	1	Pennsylvania	1
Michigan	1		

EXCEPTIONAL PRECIPITATION.

The following tables give exceptionally heavy monthly, daily, and hourly precipitation reported for April by any station, regular or voluntary, and in any year since 1871:

Exceptional monthly precipitation.

Station and state.	Am't.	Year.	Station and state.	Am't.	Year.
	Inches.			*Inches.*	
Summit, Cal	30.40	1880	Mount Washington, N. H	23.41	1878
Jackson, Miss	23.80	1874	Newport, Ark	21.20	1886
Paulding, Miss	23.60	1871	Brookhaven, Miss	20.35	1876

Exceptional daily precipitation.

Station and state.	Amount.	Date.	Station and state.	Amount.	Date.
	Inches.			*Inches.*	
Terrell, Tex	18.00	22-24, 1879	Julian, Cal	5.92	1-2, 1892
Mount St. Helena, Cal	14.70	20-21, 1880	New Haven, Conn	5.90	3-4, 1876
Point Pleasant, La	12.28	5, 1885	Helena, Ark. *b*	5.89	13-14, 1893
Fort Smith, Ark	11.00	23, 1879	Arthur City, Tex	5.85	29, 1894
Viaden, Miss	9.92	4-6, 1892	Baltimore, Md	5.82	25-26, 1889
Healdsburg, Cal	9.73	20-21, 1880	Kosciusko, Miss	5.80	6, 1892
Bay St. Louis, Miss	9.60	21-22, 1892	Columbia, La	5.75	3, 1890
New Orleans, La	9.22	7-8, 1883	Tallahassee, Fla	5.70	19-20, 1893
Fayette, Miss	9.00	15 16, 1880	St. Marys, Ga	5.70	2-3, 1876
Florence, Ala	8.71	5-7, 1892	Jasper, Ga	5.69	5-6, 1892
Sugar Ex. Station, La	8.12	21-22, 1892	Adamsville, Ga	5.63	5-6, 1892
Galinas, Tex	8.12	20-21, 1891	Colorado, Tex	5.60	23, 1890
Melissa, Tex	8.00	22-23, 1879	Diamond, Ga	5.58	6, 1892
Palo Alto, Miss	7.81	6-7, 1892	Scottsboro, Ala	5.55	5, 1892
Austin, Mo	7.50	8-9, 1891	Kendall Green, D. C	5.54	25-26, 1889
New Orleans, La	7.49	21-22, 1892	Rome, Ga	5.54	5-6, 1892
Ship Island, Miss	7.48	21-22, 1892	Corinth, Miss	5.53	13-14, 1893
Brookhaven, Miss	7.45	17-19, 1874	New Orleans, La	5.51	7, 1870
Gadsden, Ala	7.43	5-7, 1892	Abingdon, Ill	5.50	13, 1876
Point Pleasant, La	7.35	6-7, 1883	Clarksville, Tex	5.50	22-23, 1879
Santa Maria, Tex	7.34	19-20, 1888	Chattahoochee Ldg, Fla	5.50	19-20, 1893
Mobile, Ala	7.30	19, 1888	Thomasville, Ga	5.50	19-20, 1893
Helena, Ark. *a*	7.05	12-14, 1893	Dixon, Mo	5.50	29, 1893
Modesto, Cal	7.00	20-21, 1880	Burnet, Tex	5.45	29-30, 1894
Jordans Grove, Ill	7.00	3-4, 1892	Washington B'ks, D.C.	5.45	24-25, 1889
Pana, Ill	7.00	3-4, 1892	Florence, Ala. *b*	5.52	12, 1893
Shell Beach, La	7.00	21, 1890	Maurepas, La	5.42	22, 1892
Paris, Tex	6.92	29-30, 1894	Gainesville, Tex	5.40	24, 1890
Valley Head, Ala	6.89	5-6, 1892	Columbus, Miss. *a*	5.40	6-7, 1892
Helena, Ark	6.85	22-23, 1879	Moseley Hall, Fla	5.38	19-20, 1893
Tuscumbia, Ala. *a*	6.84	4-5, 1892	Mobile, Ala	5.34	24, 1881
West End, La	6.80	21-22, 1892	Brazoria, Tex	5.30	29-30, 1894
Marengo, Ind	6.77?	22, 1887	Fort Myer, Va	5.30	25-27, 1889
Wallace, La	6.75	21, 1892	Sacramento, Cal	5.28	20, 1880
Hat Creek, Wyo	6.74	21-23, 1879	Glenstead, Mo	5.20	18-19, 1893
Santa Rosa, Cal	6.70	20-21, 1880	Nevada City, Cal	5.20	21, 1880
Eight Mile, Mo	6.68	18-19, 1893	Galinas, Tex	5.20	17, 1891
Emilie, La	6.62	21-22, 1892	Norfolk, Va	5.19	16-17, 1883
Amite, La	6.57	22-23, 1890	St. Marks, Fla	5.15	14-15, 1879
Waco, Tex	6.55	29-30, 1894	Pana, Ill	5.13	3-4, 1893
Foust City, Cal	6.54	20-21, 1880	Breckenridge, Minn	5.12	10-11, 1878
Fort Sill, Okla	6.46	21-22, 1879	Homer, La	5.12	14, 1893
Sulphur Springs, Tex	6.43	29-30, 1894	New Ulm, Tex	5.12	23-24, 1879
Corsicana, Tex	6.31	22, 1879	Rolla, Mo	5.10	29-30, 1893
Covington, Ga	6.30	23, 1883	Quitman, Ga. *b*	5.10	19-20, 1893
Fayetteville, N. C	6.25	27-28, 1879	Charleston, S. C	5.09	16-17, 1879
Marksville, La	6.25	22, 1890	Nashville, Tenn	5.04	21-22, 1883
Dardanelle, Ark	6.20	15-16, 1890	Elk Falls, Kans	5.04	20, 1885
Charleston, Ill	6.12	3-4, 1892	Tomales, Cal	5.02	20-21, 1880
Savannah, Ga	6.11	16-17, 1879	Grainfield, Kans	5.00	27, 1888
Piscola, Ga	6.10	19-20, 1893	Dallas, Tex	5.00	27, 1888
Bristol, Fla	6.03	19-20, 1893	Melissa, Tex	5.00	17, 1877
Point Pleasant, La	6.02	2, 1885	Weatherford, Tex	5.00	27-28, 1888
Hammond, La	5.98	21-22, 1892	Newport, Ark	5.00	17, 1886
Montgomery, Ala	5.97	2, 1876	Lonoke, Ark	5.00	3, 1890
Healdton, Ind. T	5.97	28, 1892	Fort McHenry, Md	5.00	23-26, 1889
Baton Rouge, La	5.97	21-22, 1892	Fayetteville, Ark	5.00	29-30, 1893
Somerset, Pa	5.95	29, 1894	Marengo, Ind	5.00	11, 1893

Exceptional precipitation for one hour or less.

Station and state.	Amount.	Time.	Date.
	Inches.	*h. m.*	
Philadelphia, Pa	0.45	0 05	16, 1891
Memphis, Tenn	0.35	0 05	15, 1891

Exceptional precipitation for one hour and less—Continued.

Station and state.	Amount.	Time.	Date.
	Inches.	*h. m.*	
Jupiter, Fla	0.35	0 05	21, 1893
Jacksonville, Fla	0.33	0 05	20, 1893
Memphis, Tenn	0.30	0 05	18, 1894
Do	0.30	0 05	30, 1893
Do	0.30	0 05	20, 1892
Atlanta, Ga	0.30	0 05	7, 1892
New Orleans, La	0.27	0 05	19, 1893
Indianapolis, Ind	0.27	0 05	28, 1892
Jupiter, Fla	0.25	0 05	3, 1894
Buffalo, N. Y	0.25	0 05	9, 1890
Kansas City, Mo	0.25	0 05	17, 1892
Galveston, Tex	0.25	0 05	9, 1894
Do	0.25	0 05	18, 1893
New Orleans, La	0.25	0 05	17, 1890
Dodge City, Kans	0.25	0 05	15, 1891
Omaha, Nebr	0.25	0 05	24, 1893
Water Works, Philadelphia, Pa	0.25	0 05	16, 1891
Adrian, Mich	1.50*	0 10	5, 1888
Philadelphia, Pa	0.67	0 10	16, 1891
Jupiter, Fla	0.60	0 10	16, 1893
Memphis, Tenn	0.55	0 10	15, 1891
New Orleans, La	0.53	0 10	17, 1890
Water Works, Philadelphia, Pa	0.50	0 10	16, 1891
Egg Harbor City, N. J	1.39	0 15	27, 1890
Jacksonville, Fla	1.50*	0 20	23, 1883
Denmark, Iowa	1.00	0 20	24, 1880
Titusville, Fla	1.78	0 25	19, 1888
Houma, La	1.35	0 25	25, 1894
Cabaniss, Ga	2.00	0 30	1, 1874
Denmark, Iowa	1.87	0 30	8, 1882
Little Rock, Ark	1.50	0 30	6, 1882
Black Rock, Ark	3.42	0 40	20, 1892
Pilot Point, Tex	3.00	0 45	28, 1879
Lozier, Tex	3.50	1 00	11, 1891

* Estimated.

MONTHLY SNOWFALL.

The depth of snow that fell during the month of April, 1894, as reported by both regular and voluntary observers, is shown by the lines and figures on Chart V, which also gives, by the full line, the limit of the region within which a minimum temperature of 32° F. was at any time reported during the month; by the dotted lines is given a similar limit for 40°. The minimum temperature of 40° within a thermometer shelter is very apt to be accompanied by frosts on the surface of the ground in the neighborhood. The minimum air temperatures within Weather Bureau shelters are necessarily higher than the minimum temperatures recorded by thermometers in the open air and nearer to the surface of the ground such as is the usual exposure among voluntary observers.

The actual depth of snowfall, when above 10 inches, is given in the following table; as compared with the normal it will be seen that the snowfall was in excess during April in the middle Atlantic States and New England, which was largely due to the special snowfall of April 10–13:

Snowfall of 10 inches or more, April, 1894, with amounts on ground on the 15th and at the close of the month.

State and station.	Total.	15th.	30th.	State and station.	Total.	15th.	30th.
California.	*Inches.*	*Ins.*	*Ins.*	*Colorado*—Cont'd.	*Inches.*	*Ins.*	*Ins.*
Boca	10.0	.....	.....	Smoky Hill Mine	25.0	.....	8.0
Edmanton	37.0	20.0	10.0	Stamford	16.5	.....	.....
Emigrant Gap	26.0	.....	.....	Steamboat Springs	21.0	8.0	0.0
Greenville	22.5	.....	.....	Sunnyside	28.8	.....	.....
La Porte	30.5	30.0	18.0	Twin Lakes	26.2	.....	.....
Summit	43.0	.....	.....	*Connecticut.*			
Truckee	20.0	.....	.....	Canton	13.0	0.0	0.0
Colorado.				Falls Village	16.0	0.0	0.0
Breckenridge	46.6	.....	48.0	Greenfield Hill	12.0	T.	0.0
Brush	11.0	0.0	0.0	Lebanon	14.0	0.0	0.0
Castle Rock	13.0	0.0	6.0	Middletown	10.0	0.0	0.0
Climax	46.1	36.0	24.0	New Hartford *a*	17.5	0.0	0.0
Coma (near)	16.3	0.1	0.7	North Grosvenor Dale	12.0	0.0	0.0
Denver	10.7	0.0	0.0	Waterbury	14.0	0.0	0.0
Divide Ex. Station	14.0	.....	.....	West Simsbury	13.0	0.0	0.0
Dumont	11.4	0.0	7.4	*Idaho.*			
Gold Hill	57.5	2.0	10.0	Atlanta	33.0	70.0	60.0
Husted	11.0	0.0	T.	*Maine.*			
Lay	12.0	0.0	0.0	Bar Harbor	18.0	0.0	0.0
Manhattan	26.0	0.0	0.0	Belfast	10.0	0.0	0.0
Moraine	16.5	.....	2.0	Cornish	18.0	6.0	0.0
Pagoda (near)	15.5	.....	.....	Eastport	12.0	1.0	0.0
Pikes Peak	46.1	1.0	8.0	Gardiner	11.0	0.0	0.0
Red Cliff	32.0	.....	.....	Lewiston	11.4	.....	0.0
St. Cloud	24.0	0.0	0.0	Mayfield	5.0	12.0	0.0

Snowfall of 10 inches or more—Continued.

State and station.	Total.	15th.	30th.
Maine—Cont'd.	*Inches.*	*Ins.*	*Ins.*
Portland	15.9	0.0	0.0
Maryland.			
Bachmans Valley	17.0	.....	0.0
Darlington	24.0	0.0	0.0
Fallston	24.0	0.0	0.0
Fenby	13.0	0.0	0.0
Mt. St. Marys College	11.0	1.0	0.0
Oakland	10.5	0.0	0.0
Sunnyside	13.5	0.0	0.0
Taneytown	15.0	0.0	0.0
Massachusetts.			
Bedford	14.0	T.	0.0
Blue Hill	21.0	T.	0.0
Concord	13.5	T.	0.0
Dudley	13.0	T.	0.0
East Templeton	11.2	0.0	0.0
Fall River	11.0	0.0	0.0
Fitchburg *a*	11.0	0.0	0.0
Fitchburg *b*	14.0	0.0	0.0
Gilbertville	14.0	0.0	0.0
Groton *a*	14.0	T.	0.0
Kendall Green	12.0	0.0	0.0
Leominster	10.5	0.0	0.0
Mansfield	12.5	T.	0.0
Milton	11.0	0.0	0.0
Monroe	17.0	0.0	0.0
Monson	10.0	0.0	0.0
North Billerica	14.0	0.0	0.0
Randolph	11.0	T.	0.0
Roberts Dam	12.0	0.0	0.0
Salisbury	12.0	0.0	0.0
Taunton *d*	12.0	4.0	0.0
Wakefield	12.0	T.	0.0
Webster	11.5	0.0	0.0
Westboro	22.3	0.0	0.0
Worcester *b*	20.0	T.	0.0
Michigan.			
Boon	11.5	0.0	0.0
Calumet	10.0	14.0	0.0
Escanaba	12.2	.....	.....
Harrison	15.0	0.0	0.0
Hayes	16.0	0.0	0.0
Lathrop	12.5	0.0	0.0
Marquette	11.8	0.0	0.0
Rockland	12.0	0.0	0.0
Minnesota.			
Ada	10.0	0.0	0.0
Cromwell	16.0	0.0	0.0
Duluth	12.0	0.0	0.0
Fergus Falls	12.6	0.0	0.0
St. Olaf	13.4	0.0	0.0
Montana.			
Virginia City	15.0	.....	T.
White Sulphur Spgs	18.0	3.0	0.0
New Hampshire.			
Brookline	12.0	4.0	.....
Dublin	13.0	.....	.....
Nashua	12.0	.....	.....
Peterboro	10.5	0.0	0.0
New Jersey.			
Charlotteburg	15.0	0.0	0.0
Chester	21.0	0.0	0.0
Franklin Furnace	16.0	2.0	0.0
Junction	13.0	T.	0.0
Newton	16.0	0.0	0.0
New York.			
Addison	32.0	0.0	0.0
Alfred Center	39.3	21.0	0.0
Angelica	33.5	6.0	0.0
Arcade	20.0	3.0	0.0
Bedford	24.0	0.0	0.0
Binghamton	15.5	0.0	0.0
Buffalo	13.8	1.5	0.0
Eden Center	23.0	0.0	0.0
Elmira	20.5	0.0	0.0
Factoryville	33.0	0.0	0.0
Friendship	23.0	.....	0.0
New York—Cont'd.	*Inches.*	*Ins.*	*Ins.*
Honeymead Brook	10.0	0.0	0.0
Humphrey	25.0	0.0	0.0
Ithaca	22.3	.....	0.0
Le Roy	33.0	0.0	0.0
Lockport	11.0	0.0	0.0
Oxford	13.3	0.0	0.0
Perry City	32.9	0.0	0.0
Port Jervis	14.0	0.0	0.0
Rochester	13.3	0.0	0.0
Romulus	17.2	0.0	0.0
Rondout	11.0	0.0	0.0
South Canisteo	34.0	.....	0.0
Varysburg	28.5	0.0	0.0
Wappingers Falls	10.0	0.0	0.0
Wedgwood	32.5	15.0	0.0
North Dakota.			
Berlin	12.0	.....	.....
Grand Forks	13.4	0.0	0.0
Lemert	12.0	0.0	0.0
Napoleon	11.0	0.0	0.0
St. Johns	10.0	0.0	0.0
Woodbridge	12.0	0.0	0.0
Pennsylvania.			
Aqueduct	21.0	0.0	0.0
Bloomsburg	18.0	0.0	0.0
Carlisle *a*	18.5	0.0	0.0
Cassandra	19.0	0 0	0.0
Clarion	10.7	0.0	0.0
Coatesville	29.2	0.0	0.0
Coopersburg	10.0	0.0	0.0
Drifton	18.5	2.0	0.0
Dyberry	19.5	0.0	0.0
East Mauch Chunk	17.5	0.0	0.0
Emporium	18.4	T.	0.0
Grampian	12.0	0.0	0.0
Hamburg	30.0	0.0	0.0
Harrisburg	18.0	0.0	0.0
Honesdale	21.0	0.0	0.0
Kane	13.5	0.0	0.0
Kilmer	28.1	0.0	0.0
Lancaster	17.5	0.0	0.0
Lebanon	25.2	T.	0.0
Le Roy	32.5	10.0	0.0
Lewisburg	26.5	0.0	0.0
Lock Haven	27.9	0.0	0.0
Phœnixville	12.0	T.	0.0
Ridgway	10.9	0.0	0.0
Salem Corners	38.3	4.0	0.0
Selins Grove	33.0	0.0	0.0
Shinglehouse	21.1	0.0	0.0
State College	20.5	0.0	0.0
Wellsboro	26.0	6.0	.....
Wilkesbarre	14.0	0.0	0.0
York	26.0	T.	0.0
Rhode Island.			
Kingston	11.0	0.0	0.0
Lonsdale	13.2	0.0	0.0
Providence *a*	11.0	0.0	0.0
Providence *b*	11.0	0.0	0.0
South Dakota.			
Cross	14.5	T.	0.0
Spearfish	11.0	2.0	0.0
Utah.			
Levan	14.0	0.0	T.
Silver Lake	30.0	64.0	56.0
Wisconsin.			
Barron	15.0	0.0	0.0
Bayfield	12.0	0.0	0.0
Estella	10.0	0.0	0.0
Florence	12.0	0.0	0.0
Grantsburg	10.0	0.0	0.0
Koepenick	16.0	0.0	0.0
Menomonie	12.0	0.0	0.0
Oconto	10.0	0.0	0.0
Spooner	19.5	0.0	0.0
Wyoming.			
Laramie	13.0	0.0	0.0

SPECIAL SNOWFALL, APRIL 10–13, 1894.

The following table shows for stations east of the Allegheny Mountains the times of beginning and ending and the total depth of snowfall reported in connection with the unusual storm of April 10–13. This snow fell on the north and west sides of low area No. VIII, and may be said to have contributed to its very slow progress eastward, tending to keep the center almost stationary:

Stations.	Beginning and ending.	Depth.
Connecticut.		*Inches.*
Bridgeport	3.40 to 11 a. m., 12th	4.5
Canton	12th	8.0
Colchester	11.45 a. m., 11th, to 7.30 a. m., 12th	8.0
Falls Village	11 a. m., 11th, to 2 p. m., 12th	12.0
Greenfield Hill	Early a. m., 11th, to a. m., 12th	11.0
Hartford	12.30 p. m. to 6 p. m., 11th	7.0
Lebanon	10 a. m., 11th, to 8 p. m., 13th	12.0
Middletown	11th	9.0
New Hartford	8.30 p. m. to 12.30 p. m., 12th	12.0

Special snowfall—Continued.

Stations.	Beginning and ending.	Depth.
Connecticut—Continued.		*Inches.*
New Haven	Early a. m., 11th, to 11.10 a. m., 12th	6.0
North Grosvenor Dale	12-13th	8.0
Norwalk	Early a. m., 11th, to 8 a. m., 12th	7.0
Southington	11.30 a. m., 11th, to 11 a. m., 12th	5.0
South Manchester	11-12th	8.0
Storrs	2.30 p. m., 11th, to noon, 12th	5.5
Wallingford	11th	7.0
Waterbury	8 a. m., 11th, to 10 a. m., 12th	14.0
West Simsbury	1 p. m., 11th, to 3 p. m., 12th	8.0
District of Columbia.		
Washington	Early a. m., 11th, to early a. m., 12th	2.0
Maine.		
Cornish	5 a. m. to 4 p. m., 12th	8.0
Lewiston	7.45 a. m. to 9 p. m., 12th	5.0
North Bridgeton	5 a. m. to 1 p. m., 12th	6.0
Portland	4 a. m. to 3.45 p. m., 12th	6.6
Maryland.		
Baltimore	At intervals 10-12th	5.0
Darlington	10-11th	24.0
Fallston	9 p. m., 10th, to p. m., 11th	24.0
Fenby	11th	13.0
Mount St. Marys	9 a. m. to p. m., 11th	11.0
New Market	a. m., 10th, to 10 a. m., 12th	8.0
Oakland	5 p. m., 10th, to 9 p. m., 11th	8.0
Sunnyside	5 p. m., 10th, to 10 p. m., 11th	7.5
Massachusetts.		
Blue Hill Observatory	1.15 p. m., 11th, to 8.20 p. m., 13th	12.0
Dudley	2 p. m., 11th, to p. m., 13th	9.0
East Templeton	1 p. m., 11th, to 9.10 p. m., 12th	5.0
Fall River	3 p. m., 11th, to 5 a. m., 13th	8.0
Fitchburg (*a*)	2 p. m., 11th, to 9 p. m., 12th	6.0
Fitchburg (*b*)	2 p. m., 11th, to p. m., 12th	8.0
Gilbertville	11-12th	8.0
Groton (*a*)	1 p. m., 11th, to p. m., 12th	8.0
Mansfield	11-12th	8.0
Middleboro	5 p. m., 11th, to 5 p. m., 12th	6.0
Monroe	8 p. m., 11th, to p. m., 12th	8.0
Monson	1 p. m., 11th, to 6 p. m., 12th	6.0
North Billerica	11-12th	6.0
Randolph	11-13th	5.0
Salisbury	11-12th	8.0
Somerset	4 p. m., 11th, to early a. m., 13th	6.0
Webster	12th	6.5
Westboro	3.15 p. m., 11th, to 8 p. m., 13th	12.0
Woods Holl	2.45 p. m., 11th, to 10.10 a. m., 12th	6.5
New Hampshire		
Brookline	3 p. m., 11th, to 5 p. m., 12th	5.0
Dublin	3 p. m., 11th, to 9 a. m., 13th	8.0
Peterboro	Early a. m., to night 12th	5.5
New Jersey.		
Belvidere	11th	9.0
Boonton	10-11th	6.5
Charlotteburg	10-12th	14.0
Chester	2 p. m., 10th, to early a. m., 12th	21.0
Dover	3 p. m., 10th, to 9 a. m., 12th	9.2
Franklin Furnace	3 p. m., 10th, to 4 p. m., 12th	15.0
Gillette	10-12th	8.0
Junction	1 p. m., 10th, to p. m., 11th	12.0
Newton	3 p. m., 10th, to 11th	15.0
Paterson	6 p. m., 11th, to 10 a. m., 13th	6.5
South Orange	4 p. m., 10th, to 3 p. m., 12th	5.0
New York.		
Addison	10 a. m., 10th, to 2 p. m., 12th	26.0
Angelica	9.30 p. m., 10th, to 8 a. m., 12th	28.0
Arcade	9 a. m., 10th, to 5 p. m., 11th	17.0
Bedford	1 a. m., 11th, to 9 a. m., 12th	24.0
Binghamton	2 p. m., 10th, to 6 p. m., 10th	11.5
Buffalo	9.50 a. m., 10th, to 2.45 p. m., 11th	12.9
Elmira	a. m., 11th, to 2.35 p. m., 12th	17.5
Factoryville	12.30 p. m., 10th, to 3 p. m., 12th	26.5
Friendship	8 a. m., 10th, to 10 a. m., 12th	19.0
Hess Road Station	12.30 p. m., 10th, to 1.30 p. m., 11th	9.3
Honeymead Brook	10 a. m., to 7 p. m., 11th	6.0
Humphrey	7.30 a. m., 10th, to p. m., 11th	18.0
Ithaca	1.45 p. m., 10th, to 1.30 p. m., 11th	16.0
Le Roy	10-11th	30.0
Lockport	10-11th	11.0
Perry City	2.15 p. m., 10th, to 12th	27.2
Port Jervis	6 p. m., 10th, to early a. m., 11th	13.0
Rochester	12.45 p. m., 10th, to 4.15 p. m., 11th	12.0
South Canisteo	10.15 a. m., 10th, to 10 a. m., 12th	28.8
Varysburg	11 a. m., 10th, to 6 p. m., 11th	26.0
Wedgwood	Noon, 10th, to 4 p. m., 12th	26.0
Pennsylvania.		
Aqueduct	9.30 a. m., 10th, to 7.29 p. m., 12th	21.0
Bloomsburg	10.30 a. m., 10th, to p. m., 11th	18.0
Carlisle	7.30 a. m., 10th, to 8.10 a. m., 12th	18.5
Cassandra	1.30 a. m., 10th, to early a. m., 12th	12.0
Coatesville	10.30 a. m., 10th, to 2.30 p. m., 12th	29.2
Coopersburg	12.15 p. m., 10th, to 8 p. m., 11th	10.0
Dyberry	4 p. m., 10th, to 6 a. m., 12th	13.0
East Mauch Chunk	10 a m., 10th, to 3 a. m., 12th	14.0
Emporium	7.30 a. m., 10th, to 10 p. m., 11th	15.1
Hamburg	10-12th	26.0
Harrisburg	9.24 a. m., 10th, to early a. m., 12th	18.0
Honesdale	10-12th	14.0
Kilmer	7.45 a. m., 10th, to 6.40 p. m., 11th	28.0
Lancaster	8 a. m., 10th, to 7 a. m., 12th	17.5
Lebanon	9.45 a. m., 10th, to 6.30 a. m., 12th	25.0
Le Roy	11 a. m., 10th, to 5 p. m., 12th	27.5
Lewisburg	10 a. m., 10th, to 9 a. m., 12th	25.0
Lock Haven	9 a. m., 19th, to 8 a. m., 12th	25.9
Phœnixville	10.13 a. m., 10th, to early a. m., 12th	12.0
Salem Corners	2 p. m , 10th, to 4 a. m., 12th	31.5
Selins Grove	9 a. m., 10th, to 2 p. m., 11th	28.5
Shinglehouse	9 a. m., 10th, to 12th	17.5
State College	10-11th	18.0
Wellsboro	12.15 p. m., 10th, to 2 30 p. m., 12th	21.5

Special snowfall—Continued.

Stations.	Beginning and ending.	Depth.
Pennsylvania—Continued.		*Inches.*
Wilkesbarre	10 a. m., 10th, to 10 p. m., 11th	14.0
York	8 a. m., 10th, to 8 a. m., 12th	26.0
Rhode Island.		
Bristol	1.45 p. m., 11th, to p. m., 13th	5.0
Kingston	10.50 a. m., 11th, to 9.55 a. m., 12th	8.0
Lonsdale	5 a. m., 11th, to 7 a. m., 12th	7.2
Pawtucket	12.05 p. m., 11th, to 5 p. m., 13th	7.0
Providence	2 p. m., 11th, to 3 p. m., 13th	9.0
Vermont.		
Norwich	6 a. m. to 4 p. m., 12th	5.0
Virginia.		
Ashland	11th	T.
Big Stone Gap	11th	T.
Blacksburg	11th	T.
Dale Enterprise	7 p. m., 9th, to 8 p. m., 11th	1.5
Falls Church	11th	0.1
Marion	11th	T.
Norfolk	7 a. m. to 7.25 a. m., 12th	T.
Stanardsville	11th	T.
Stephens City	10–11th	3.5
Wytheville	12th	T.

DEPTH OF SNOW ON GROUND.

The depth of unmelted snow lying on the ground at 8 p. m. of April 30 was too small and irregularly distributed to justify the publication of Chart No. VI, as in previous winter months, and this is therefore omitted, but the depth is given in figures in connection with the table of total snowfalls in the preceding section. Among the mountains of California, Colorado, Idaho, and Utah, there were many spots having 10 inches or more on the ground at the end of the month.

On the 15th of the month there were traces in the eastern portions of Massachusetts, Pennsylvania, and central Maryland; from 10 to 20 inches in northern Maine and central New York; 36 inches were reported at Climax, Colo.; 30 at La Porte, Cal.; 70 at Atlanta, Idaho; 64 at Silver Lake, Utah.

HAIL.

Description of the more severe hailstorms of the month is given under "Local storms." Hail was reported as follows: 1st, Oregon. 2d, Idaho and Washington. 3d, Arkansas, Illinois, Louisiana, Minnesota, Missouri, Tennessee, Texas, and Washington. 4th, Delaware, Florida, Illinois, Louisiana, New Jersey, New York, and Texas. 5th, Florida, Illinois, Indiana, Iowa, Michigan, Pennsylvania, and Texas. 6th, Connecticut, Kansas, Massachusetts, Missouri, New Jersey, and Washington. 7th, Kansas, Missouri, Ohio, and Washington. 8th, Alabama, Arkansas, Indian Territory, Iowa, Kansas, Minnesota, Missouri, Nebraska, New Jersey, and Texas. 9th, Indian Territory, Iowa, Kansas, Oklahoma, South Dakota, Tennessee, and Texas. 10th, Delaware, Kentucky, Ohio, and West Virginia. 11th, Idaho, Missouri, and Washington. 12th, Arizona, Idaho, Illinois, Kansas, and Kentucky. 13th, Louisiana, Oklahoma, and Texas. 14th, Arkansas, Kansas, Louisiana, Mississippi, Missouri, Montana, Oregon, and Washington. 15th, Colorado, Idaho, Minnesota, Washington, and Oregon.

16th, Colorado, Idaho, Iowa, Minnesota, Missouri, Nebraska, Oregon, South Dakota, Texas, and Washington. 17th, Arkansas, Colorado, Iowa, Kansas, Louisiana, Minnesota, Mississippi, Missouri, Nebraska, North Dakota, Oklahoma, South Dakota, Tennessee, Texas, Wisconsin, and Wyoming. 18th, Arkansas, Idaho, Illinois, Indiana, Iowa, Kentucky, Louisiana, Minnesota, Missouri, Montana, Nebraska, North Carolina, Ohio, Oklahoma, South Carolina, Tennessee, Texas, and Wyoming. 19th, Alabama, Georgia, Indiana, Indian Territory, Kansas, Maryland, Mississippi, Missouri, Nebraska, North Carolina, Ohio, Pennsylvania, South Carolina, West Virginia, and Wisconsin. 20th, Alabama, District of Columbia, Georgia, Illinois, Indiana, Kentucky, Maryland, Michigan, Missouri, North Carolina, Ohio, Pennsylvania, South Carolina, Tennessee, Vermont, Virginia, and West Virginia. 21st, Georgia, Illinois, New Jersey, New York, Ohio, Oregon, Pennsylvania, Vermont, Virginia, and West Virginia. 22d, Arkansas, Connecticut, Idaho, Kentucky, Massachusetts, Nevada, New York, Vermont, Washington, and West Virginia. 23d, Arkansas, Colorado, Louisiana, Montana, Nebraska, Nevada, New Hampshire, and North Carolina. 24th, Connecticut, Georgia, Kansas, Louisiana, Massachusetts, Nebraska, New Hampshire, North Dakota, Rhode Island, and Texas.

25th, California, Kansas, Nevada, Oregon, South Dakota, and Texas. 26th, Alabama, California, Idaho, Indiana, Kansas, Minnesota, Missouri, Montana, Nebraska, Oregon, South Dakota, and Wyoming. 27th, California, Idaho, Nebraska, North Dakota, Ohio, Pennsylvania, South Dakota, Washington, West Virginia, Wisconsin, and Wyoming. 28th, Idaho, Iowa, Kansas, Maryland, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, Oklahoma, Pennsylvania, South Dakota, Texas, West Virginia, Wisconsin, and Wyoming. 29th, Arkansas, Idaho, Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, Ohio, South Carolina, South Dakota, Texas, Utah, Washington, West Virginia, and Wisconsin. 30th, Arkansas, Georgia, Illinois, Iowa, Kansas, Missouri, Nebraska, Oklahoma, Oregon, South Dakota, and Washington.

SLEET.

Description of the more severe sleetstorms of the month is given under "Local storms." Sleet was reported as follows: 1st, New York. 2d, Idaho and Utah. 3d, Michigan, Minnesota, Nebraska, North Dakota, Ohio, and South Dakota. 4th, Iowa, Minnesota, Nebraska, New York, Pennsylvania, and Wisconsin. 5th, Indiana, New Hampshire, New Jersey, New York, Ohio, and Pennsylvania. 6th, Connecticut, Massachusetts, New York, and Pennsylvania. 7th, Idaho, Indiana, Minnesota, and New Jersey. 8th, Colorado, Iowa, Kansas, Maine, Massachusetts, Minnesota, Nebraska, New Jersey, New York, North Dakota, Pennsylvania, Rhode Island, South Dakota, and West Virginia. 9th, Illinois, Indiana, Michigan, Minnesota, Ohio, Virginia, West Virginia, and Wisconsin. 10th, Delaware, District of Columbia, Illinois, Indiana, Iowa, Maryland, Michigan, New Jersey, New York, Ohio, Pennsylvania, Virginia, and West Virginia. 11th, Idaho, Kentucky, Maryland, Massachusetts, Michigan, New Jersey, New York, Ohio, Pennsylvania, Rhode Island, Tennessee, Utah, and West Virginia. 12th, Arizona, Colorado, Delaware, Massachusetts, New Jersey, New York, Rhode Island, and West Virginia. 13th, Maine and Massachusetts.

14th, Oregon. 15th, Colorado, Idaho, Nevada, Oregon, and South Dakota. 16th, Arizona, Nevada, North Dakota, and Utah. 17th, Colorado, New Mexico, and Utah. 18th, Colorado, Montana, and North Dakota. 19th, Iowa, Minnesota, Nebraska, and South Dakota. 20th, Minnesota and Nebraska. 21st, Nevada and West Virginia. 23d, California and Nevada. 25th, California, Nevada, and Utah. 26th, Colorado and Nevada. 27th, Idaho, Montana, and Nevada. 28th, Nevada. 29th, Colorado and Utah. 30th, Colorado and Montana.

PRECIPITATION AS AFFECTING AGRICULTURE.

The following records of precipitation as affecting agriculture are taken from newspapers and official reports of the State Weather Services:

Florida.—In the central and southern counties of the peninsula the precipitation was very light, being insufficient for the needs of vegetation generally throughout this whole region.

Iowa.—The average precipitation was somewhat above the normal amount, but the number of storm days was about the average, and no section suffered materially from lack of moisture. This gave favorable conditions for farm work and the time was well improved in seeding and preparing for corn planting.

Louisiana.—In south Louisiana there was a comparatively dry period between the 10th and 23d, only broken by scattered showers, and the general rains of 23d and 24th, therefore, came in the nick of time for vegetation, which is in a very favorable condition at this time.

The rains were quite equally distributed during the month, and though not required in the northern section, owing to the saturated soil from the earlier spring rains, yet the crop conditions at date, though late, are very favorable.

The stands of cane, cotton, corn, and rice are generally good in all districts. Cotton is practically all in, and the acreage of this staple will vary but slightly from that of 1893. There is an increased acreage to cane, and to rice in portions of the southwestern parishes.

Missouri.—From the 22d to the 29th vegetation made considerable growth, but there was a lack of moisture until the 29th and 30th when local showers occurred in all sections, though in many of the northern and western counties droughty conditions prevailed until the close of the month.

New England.—Rain is badly needed in most sections for the growth of vegetation; springs and wells are very low, some observers reporting that they are the lowest ever known at this season of the year.

Nevada.—Precipitation was generally deficient throughout the State. Until the storm of the 21st and 22d the ranchers were fearful as to the crops, not enough snow having fallen in the mountains to give a sufficient supply of water for irrigation; but as the snow fell to considerable depth all over the mountains it is expected that the water supply will be all that is required.

North Dakota.—This month has been remarkable only for the unusual amount of precipitation. This excess and the continued cold and cloudy weather delayed farm work in all parts of the State, so that the season was considerably behind the average for the past few years, but with the average amount of sunshine that is to be expected, it is probable that the time lost during this month will be made up later.

Oklahoma.—In every section of the country the rainfall has been abundant, the weather warm and pleasant, and crops of all kinds in good condition.

Tennessee.—Nunnelly: want of rain has caused all seed planted early in the month to germinate badly.

Utah.—Blustering high winds were frequent throughout the month; they were dry and had a bad effect on crops.

WIND.

PREVAILING WINDS.

The prevailing winds for April, 1894, viz, those that were recorded most frequently at Weather Bureau stations, are shown in Table I, but are not given on Chart II, as has hitherto been the custom. The summary of State Weather Service reports gives the prevailing winds recorded at voluntary stations in the respective States; these may be summarized as follows:

South.—Alabama, Arkansas, Connecticut, Louisiana, Oklahoma, Tennessee, Texas.

Southwest.—Arizona, Indiana, Kentucky, Massachusetts, Michigan, Nevada, Ohio, Oregon, South Carolina, Washington.

West.—California, Colorado, Georgia, New Mexico, West Virginia.

Northwest.—California, Georgia, Idaho, Maryland, Montana, Nebraska, New Jersey, New York, Pennsylvania, South Dakota, Utah, Virginia, Wyoming.

North.—New Hampshire, Vermont.

Northeast.—Maine.

East.—None.

Southeast.—Florida, Illinois, Iowa, Minnesota, Missouri, North Carolina, North Dakota, Wisconsin.

RESULTANT WINDS.

The resultants for the current month, as deduced from the hourly records of winds, by self-registers at about 67 regular Weather Bureau stations, are given in Table VIII. Other resultants, deduced from the personal observations made at 8 a. m. and 8 p. m. at all stations that appear on the morning and evening maps of the Weather Bureau, are given in Table IX. These latter resultants are also shown graphically on Chart II, in connection with the isobars based on the same system of simultaneous observation; the small figure attached to each arrow shows the number of hours that this resultant prevailed, on the assumption that each of the morning and evening observations represent one hour's duration of a wind of average velocity; these figures (or the ratio between them and the total number of observations in this month) indicate the extent to which winds from different directions counterbalance each other. The original north, south, east, and west components, on which these resultants are based, are given in detail in Table IX for convenience in making further studies.

During April the resultant direction, as shown by Table IX, was from the northwest in New England, the middle Atlantic States, and the south Pacific coast region; from the southwest in the north Pacific coast region; from the south, viz, southeast and southwest, in the eastern and western Gulf regions; from the southeast in the upper Mississippi and Missouri valleys; from the west, viz, southwest and northwest, in the lower Lake region, northern, middle, and southern plateaus, northern and middle Pacific slopes.

In general, the resultant winds and directions fall within the same quadrant, but occasionally a notable discrepancy occurs, as shown by the large positive or negative angles in the eleventh column of Table VIII; the resultant directions given in Table IX also differ sometimes largely from those given for the same stations in Table VIII. As notable discrepancies of this kind, on the one hand, illustrate the remarks on this subject made in the REVIEWS for last September and January, and, on the other hand, invite a special consideration of local peculiarities, therefore, the following remarks on the resultant winds for the current month are appropriate:

At Norfolk there is an actual prevalence of weak north, northeast, and east winds, which gives a resultant direction n. 51° e. computed from the duration. The south and southwest winds, however, blow with twice the velocity of the north, northeast, and east winds, thus giving a resultant movement as in Table VIII. It would seem that the wind that blows at Washington and Lynchburg as a northwest wind is felt in Norfolk as a southwest wind.

The discrepancy between Cleveland and Toledo appears to result from the fact that the east winds at Toledo become southeast winds at Cleveland probably through some local cause at one station or the other. The south and southwest winds at Toledo have a much greater velocity than at Cleveland.

At Marquette the north winds were extremely light, whereas the south and southeast winds were strong, although they did not blow for so long a period.

HIGH WINDS.

Wind velocities of 50 miles, or more, per hour were reported at regular stations of the Weather Bureau as follows (maximum velocities are averages for 5 minutes; extreme velocities are gusts of shorter duration):

Stations.	Date.	Velocity.	Direction.	Stations.	Date.	Velocity.	Direction.
		Miles.				*Miles.*	
Amarillo, Tex	8	64	n.	Fort Canby, Wash	1	64	s.
Do	16	56	s.	Do	6	66	s.
Do	17	60	sw.	Do	17	56	s.
Do	26	56	se.	Do	28	64	s.
Do	28	52	s.	Huron, S. Dak	3	64	nw.
Bismarck, N. Dak	3	50	nw.	Lexington, Ky	10	62	sw.
Block Island, R. I	11	72	e.	Do	18	60	ne.
Do	12	59	e.	Nantucket, Mass	11	60	ne.
Do	13	60	ne.	Pikes Peak, Colo	2	82	w.
Cheyenne, Wyo	2	50	nw.	Do	3	84	w.
Chicago, Ill	3	50	se.	Do	29	104	sw.
Do	30	52	sw.	Port Huron, Mich	4	54	sw.
Colorado Springs, Colo	12	50	n.	Pueblo, Colo	30	50	n.
Do	30	52	n.	Tatoosh Island, Wash	25	53	e.
Columbus, Ohio	4	52	w.	Valentine, Nebr	19	52	nw.
El Paso, Tex	17	50	nw.	Winnemucca, Nev	25	52	w.
Erie, Pa	10	60	se.	Woods Holl, Mass	4	54	sw.

LOCAL STORMS.

1st.—At Salubria, Idaho, a heavy windstorm began at 11

p. m., and continued until 2.50 a. m., 2d; damage was done to fences.

3d.—During a heavy thunderstorm at Madding, Ark., damage was done by wind.

4th.—Thirteen miles south of Orlando, Fla., a heavy wind and hail storm destroyed crops. Considerable damage was done by a windstorm at Sutton, Nebr.

8th.—Northeast gales and heavy snow prevailed over the New England States, and heavy seas were reported along the coast. At Boston, Mass., moist snow began at 12.05 a. m., accompanied by high wind; much damage was done to electric wires. A schooner went ashore at Hull, Mass.; the vessel was a total wreck, but the crew were saved by the Life-Saving Service. At Chatham, Mass., a barkentine was wrecked and six men were drowned. A severe local storm moved northeast over Siloam Springs, Ark., about 11 p. m., attended by high wind and small hail; one person was killed and a house demolished. At Lehigh, Ind. T., a severe wind and rain storm, accompanied by large hail, did considerable damage to gardens. The storm was general throughout Indian and Oklahoma Territories; electric wires were prostrated and houses damaged. An exceptionally severe windstorm, attended by heavy rain and hail, passed over Coffee County, Kans., about 6 p. m.; within a radius of 4 miles 17 houses were demolished or damaged beyond repair, orchards were ruined and stock killed; the damage to property and crops was estimated at $100,000. At Sedan, Kans., a storm moving east injured several persons and destroyed houses and orchards. In the eastern part of Greenwood County, Kans., several houses were demolished and great damage was done to crops.

9th.—A storm of wind and rain, moving in a path about 2 miles wide, visited the vicinity of Clarksdale, Miss., about 3.30 p. m.; the damage to property was estimated at about $4,000. A severe thunder and wind storm occurred at Lonoke, Ark., about 1.30 p. m.; several persons were injured and property was damaged to the extent of $8,000. A heavy rain and thunder storm passed over the vicinity of Pocahontas, Ark., washing away bridges. During a thunderstorm at Louisville, Ky., some damage was done by lightning. Damage was caused by lightning in Warrick and Spencer counties, Ind.

10th.—A report from Bladen County, N. C., states that a severe wind-storm passed over the vicinity of Prospect Hall, in that county, in the evening. Considerable damage was done to property. A storm, moving northeast, struck Newberry County, S. C., about 12.30 p. m.; a roar was heard on either side of the track for a distance of 2 or 3 miles. It did slight damage for a distance of 6 miles, then the cloud appeared to descend, and in a space of half a mile almost every tree was torn up by the roots. Houses were blown down by a heavy windstorm at Tatum Station, S. C.

10–12th.—Unusually severe snowstorms, accompanied by gales, prevailed over New England and the middle Atlantic States, causing loss of life and damage to shipping. At Boston, Mass., alternate rain and snow with hard gales prevailed from the morning of the 11th to the 13th; all vessels remained in port. Along the Massachusetts coast several vessels were blown ashore. At Vineyard Haven, Mass., a heavy rain and gale began at 3 p. m., 11th, changed to snow at 7 p. m., and continued until the morning of the 12th. A number of accidents occurred to shipping, and electric wires were prostrated. A severe snowstorm, with a northeast gale, began at New Haven, Conn., the early morning of the 11th and continued until 11.10 a. m., 12th; damage was done to electric wires and traffic delayed. At Bridgeport, Conn., a heavy snowstorm began at 3.40 a. m., 11th, and continued until 11 a. m., 12th; damage was done to electric wires. A report from New York, N. Y., states that at Highland Beach, N. J., 2 vessels were lost and 15 persons drowned. The sea was very heavy all along the New York and New Jersey coasts, and much damage was done to property.

At Buffalo, N. Y., a snowstorm began at 9.50 a. m., 10th, and continued until 2.45 p. m., 11th; 8.9 inches of snow fell during the storm. Traffic was delayed and damage was done to electric wires and trees. A heavy snowstorm, with high northeast wind, began at Toms River, N. J., on the 10th, and continued until the early a. m. of the 11th; outhouses and trees were blown down. A severe storm of wind and rain began at Erie, Pa., at 8.35 a. m., and continued until 11.18 p. m., 10th. The wind reached a maximum velocity of 60 miles per hour; one person was injured, great damage done to electric wires, and railroad traffic delayed. At Harrisburg, Pa., snow began 9.24 a. m., 10th, and continued at intervals until early a. m., 12th. About 18 inches of snow fell, damaging trees and electric wires. A tabulated statement, giving the beginning and ending, and the total depth of snowfall in the several States during this storm, is given on page 164.

11th.—A cloudburst occurred 18 miles northwest of Boerne, Tex., about 5 p. m.; railroad tracks were washed out and crops destroyed.

13th.—About 5.30 p. m., a violent local storm, with hail and a funnel-shaped cloud, passed 3 miles east of Bowie, Tex., in a path about 300 yards wide, injuring several persons and damaging property to the estimated value of $2,500.

14th.—Crops were destroyed by hail at Canton, Miss.

15th.—High wind in the early morning, damaging fences and trees, at Florence Station, Tenn.

17th.—During a thunderstorm at Mason, Tenn., one person was killed by lightning. Minor damage was caused by a thunderstorm at Palestine, Tex., from 9.35 to 11.05 a. m. A narrow belt of storms swept across the State of Iowa from Harrison to Clinton counties; in the former county the rain was very heavy, causing damage by flood. At Mitchellville, Iowa, the hail did considerable damage to glass. At Albia, Iowa, a house was struck by lightning. A thunderstorm, lasting about one hour, began at Davenport, Iowa, at 5.15 p. m.; for fifteen minutes the wind blew at the rate of 48 miles per hour; considerable damage was done to buildings. During a thunderstorm near Keosauqua, Iowa, one person was killed and another stunned by lightning. High wind at St. Charles, Mo., blew down fences. In the evening rain and hail storms prevailed in central and southern Kansas and the Cherokee Strip, Okla., damaging property and crops.

18th.—Severe local storms occurred in Arkansas, Illinois, Indiana, and Missouri. A heavy wind, rain, and hail storm moved southeast over Lonoke and Prairie counties, Ark., injuring several persons and damaging buildings and timber. A windstorm, moving northeast, occurred at Maysville, Ky., about 4 p. m.; a funnel-shaped cloud was observed; one building was wrecked. During a thunderstorm at Bloomington, Ill., a barn was struck by lightning. About 6.20 p. m. a severe storm with a funnel-shaped cloud caused damage to the amount of $8,000 at New Athens, Ill. At Springfield, Ill., a heavy thunderstorm, moving northeast with high wind and hail, prevailed from 11.25 a. m. to 1.20 p. m. The temperature fell 18° in thirteen minutes; a horse was killed by lightning, and damage was done to property. In Carroll County, Ind., a thunderstorm with high wind caused considerable damage of a minor character. At Cedar Gap, Mo., a thunderstorm caused damage to the amount of $200. During a thunderstorm at Gordonville, Mo., 2 persons were injured by lightning. A severe storm, about 20 miles northeast of Potosi, Mo., caused damage of a minor character. A severe storm with a funnel-shaped cloud moved northeast over Summersville, Mo., about 4 p. m.; the storm had a whirling motion from right to left; 3 persons were killed, a number injured, and 8 houses were blown down.

19th.—A barn was struck by lightning and stock killed during a thunderstorm at Cumberland, Wis.

20th.—A rain, hail, and thunder storm occurred at Clayton, N. Y., about 7.15 p. m., causing considerable damage to property. Eight miles north of Augusta, Ga., a hailstorm of short duration damaged young corn.

21st.—During a thunderstorm at North Hammond, N. Y., considerable damage was done by lightning. At Binola, Ohio, a barn was struck by lightning.

23d.—A heavy thunder, rain, and hail storm prevailed at Shreveport, La., in the afternoon; crops were damaged. At Burkeville, Tex., a storm, with a funnel-shaped cloud, thunder, and lightning, moved east, damaging property to the amount of $2,000.

24th.—Heavy thunder and hail storms occurred in Louisiana. At Lawrence, La., a wind, rain, and hail storm began at 8.30 p. m., destroying garden truck. At New Orleans, La., a thunderstorm, with exceptionally heavy rain, began at 7.50 and continued until 9.35 p. m.; 2.18 inches of rain fell in 55 minutes; a man was killed by lightning. At Pointe a la Hache, La., a heavy rain and hail storm moved in a path about 1 mile wide at 9 p. m.; crops were destroyed. A thunder and hail storm passed over Shreveport, La., between 5.50 and 7 a. m., during which the wind reached an extreme velocity of 60 miles per hour; hothouses were demolished and crops badly damaged. The storm swept over the adjoining parish of Bossier, ruining corn and cotton. At Williams, in Red River Parish, the storm was reported one of the most destructive that has visited that locality. A heavy thunderstorm at Luling, Tex., destroyed crops.

25th.—In the early morning a heavy rain and hail storm at Garden City, Kans., was very destructive to grain. During a strong gust of wind at Seattle, Wash., at 9.55 p. m., the wind vane and anemometer support at the Weather Bureau Office were blown down and broken. A thunderstorm passed 4 miles west of Olympia, Wash., in the evening; 2 barns were struck by lightning.

27th.—During a thunderstorm at Chicago, Ill., in the evening, 2 persons were killed by lightning.

28th.—In the southern part of Cumberland County, N. J., 3 persons were stunned and several houses were struck by lightning. A severe local storm moved southeast over Mansfield, Ohio, about 5.30 p. m.; the damage to property was placed at $5,000. Glass was broken by heavy hail at Lansing, Mich. An unusually heavy rain and thunderstorm occurred at Winnview, Okla.; stock was killed by lightning. Damage was done by a hail and wind storm at Whiteside, Mo. Hailstorms of marked severity prevailed throughout Iowa. At Cherokee, Iowa, the damage by hail was estimated at $10,000. At Keosauqua, Iowa, 2.43 inches of rain, with heavy hail, fell in about one hour; bridges were washed away and the hail destroyed gardens and glass. At Fayette, Iowa, hail and wind damaged buildings and stock. During a thunderstorm at Nora Springs, Iowa, a boy was killed by lightning. Heavy hail damaged glass at Hartington, Nebr. A windstorm at Beaver City, Nebr., damaged small grain. At Fort Berthold, N. Dak., a heavy wind and thunder storm occurred at night; some damage resulted from the high wind. Considerable damage was done by a heavy windstorm at Wallet, Colo.

29th.—At Tyler, Tex., a heavy rain and wind storm, lasting about 40 minutes, did considerable damage to property. At Brunswick, Mo., a windstorm, at 2.40 p. m., caused damage of a minor character. In Calloway County, Mo., some damage was done by high wind. During a thunderstorm about midnight at Steffenville, Mo., stock was killed by lightning. A destructive storm moved northeast in a path about 200 feet wide, near Ellsworth, Iowa; 2 persons were killed. At Forest City and Ottumwa, Iowa, windstorms damaged buildings and trees.

30th.—About 4.10 p. m., a severe storm, with a funnel-shaped cloud, moved northeastward in the vicinity of Texarkana, Ark.; 2 persons were killed, and property was destroyed to the estimated value of $10,000. A heavy wind and rain storm occurred at Bee Branch, Ark., about 9 p. m.; a house was moved from its foundation. Tehuacana, Tex., was visited by a heavy rain and thunder storm, which moved northeast about 2.45 p. m., causing damage to the extent of $5,000. Destructive thunder and wind storms occurred in Illinois. At Astoria, Ill., the damage to property was $500. At Rushville, Ill., the storm was attended by thunder, lightning, and hail, doing damage to barns, etc. Three miles east of Bushnell, Ill., considerable damage was done by heavy hail. At Rockford, Ill., rain flooded lowlands and hail damaged fruit. A violent storm, with hail, struck Tower Hill, Ill., about 3.30 p. m.; glass was broken and fruit damaged. During a thunderstorm at Keokuk, Iowa, a house was struck by lightning. Some damage was done by hail at Clinton, Iowa.

ATMOSPHERIC ELECTRICITY.

GENERAL STATISTICS.

The table on page 169 shows in detail for April, 1894, the number of stations from which meteorological reports were received, and the number of such stations reporting thunderstorms (T) and auroras(A) in each State and on each day of the month.

THUNDERSTORMS.

A mention of the more severe thunderstorms reported during the month is given under "Local storms." The dates on which reports of thunderstorms were most numerous were the 17th, 196; 18th, 194; 21st, 175; 27th, 164; 28th, 221; 29th, 214; 30th, 155.

The States from which the reports of thunderstorms were most numerous were: Missouri, 197; Ohio, 171; Minnesota, 153; Iowa, 148; Louisiana, 108; Wisconsin, 104.

AURORAS.

The evenings on which bright moonlight must have interfered with observations of faint auroras are assumed to be the four days preceding and following the date of full moon, viz, from the 15th to the 23d, inclusive. On the remaining twenty-one days of the month 175 reports were received, or an average of 8 per day. The dates on which the reported number especially exceeded this average were the 12th (67), 17th (19), 30th (19).

LIGHTNING.

The voluntary observer, Mr. John J. Cass, of Allison, Decatur Co., Kans., under date of April 2, reports, as follows:

Remarkable electric display here this date. Threatening clouds, followed by a gale and dust storm at 7 p. m. Bluish electric lights on terminal tree buds and on the harness, etc., of teams traveling. Shocks reported from touching fence wires. These conditions existing 10 miles north and south of this station.

Thunderstorms and auroras, April, 1894.

States.	No. of stations.		1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.	17.	18.	19.	20.	21.	22.	23.	24.	25.	26.	27.	28.	29.	30.	31.	Total.
Alabama	53	T.	5	....	3	4	....	....	....	2	6	2	....	....	....	1	....	....	6	....	2	2	....	....	2	1	....	....	2	2	....	....	....	40 T.
		A.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0 A.
Arizona	50	T.	....	....	....	....	....	....	....	....	....	....	1	1	....	....	....	....	....	....	....	....	1	....	....	....	....	....	....	....	....	....	....	3 T.
		A.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0 A.
Arkansas	49	T.	1	....	9	1	....	....	2	1	12	....	....	....	1	8	....	....	8	8	....	....	....	3	5	6	....	....	1	....	6	13	....	85 T.
		A.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0 A.
Colorado	77	T.	....	....	....	....	....	1	....	....	....	....	....	1	1	3	2	1	3	....	....	....	2	....	1	....	....	....	....	....	2	3	....	20 T.
		A.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0 A.
California	316	T.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....	....	....	6	2	....	....	....	....	....	9 T.
		A.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....	....	....	....	1 A.
Connecticut	23	T.	....	....	....	....	....	2	....	....	....	....	....	1	....	....	....	....	1	....	....	....	7	6	1	....	....	....	....	1	....	....	....	....	16 T.
		A.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	2	....	....	....	3 A.
Delaware	5	T.	....	....	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	2	....	....	....	3 T.
		A.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1 A.
District of Columbia	4	T.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....	....	1	1	....	....	....	8 T.
		A.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0 A.
Florida	35	T.	....	....	2	6	5	....	....	....	....	3	....	....	....	....	1	3	3	2	....	3	....	....	6	6	7	1	....	....	....	2	....	50 T.
		A.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0 A.
Georgia	51	T.	....	....	1	6	....	....	....	....	2	1	....	....	....	....	2	1	....	1	8	4	....	....	....	1	....	1	1	1	6	1	....	37 T.
		A.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0 A.
Idaho	25	T.	1	....	....	....	....	....	....	....	....	2	....	....	....	....	....	....	....	....	....	....	1	3	....	....	2	1	....	....	....	....	....	10 T.
		A.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....	....	1 A.
Illinois	57	T.	1	....	2	....	1	....	3	2	5	....	....	....	....	....	....	....	14	22	2	2	....	....	....	....	....	....	8	8	5	14	....	89 T.
		A.	....	....	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....	12	4	1	....	....	....	....	....	1	3	4	3	6	....	37 T.
Indiana	46	T.	....	....	....	....	....	....	....	....	3	....	....	2	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	2	1	....	8 T.
		A.	....	....	....	....	....	....	....	2	1	....	....	....	1	....	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	0 A.
Indian Territory	8	T.	....	1	3	....	....	....	....	16	2	....	....	1	....	1	....	5	26	17	....	....	....	....	....	....	1	1	8	21	27	18	....	148 T.
		A.	....	....	....	....	1	....	1	....	....	....	....	6	....	....	....	....	8	1	....	....	....	1	7	6	....	2	2	3	9	5	....	92 T.
Iowa	79	T.	....	1	....	....	7	5	12	2	1	1	4	9	5	1	....	8	1	....	....	....	1	7	6	....	2	2	3	9	5	....	92 T.
		A.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0 A.
Kansas	78	T.	1	....	1	....	....	....	....	4	1	....	....	....	....	....	....	....	3	7	1	....	....	....	....	....	....	1	2	....	8	2	....	31 T.
		A.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0 A.
Kentucky	40	T.	1	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0 A.
		A.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0 A.
Louisiana	52	T.	4	1	3	13	4	....	....	2	10	3	....	1	....	11	....	....	5	4	9	1	....	4	5	16	5	....	....	3	2	2	....	108 T.
		A.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0 A.
Maine	19	T.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0 T.
		A.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	2 A.
Maryland	26	T.	....	1	....	....	....	1	1	....	....	....	....	....	....	....	....	....	3	....	....	....	....	....	....	....	....	....	1	1	1	1	....	9 A.
		A.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....	4	9	2	....	....	....	....	....	5	12	1	1	....	36 T.
Massachusetts	85	T.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....	....	....	....	....	1 A.
		A.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	5	1	12	....	....	....	4	2	....	....	....	24 T.
Michigan	91	T.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	5	....	....	....	....	....	....	....	2	1	2	....	....	....	....	9 A.
		A.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	7	3	1	....	....	....	....	....	....	8	15	1	10	....	46 T.
Minnesota	79	T.	....	....	....	....	....	....	5	....	4	....	....	14	....	....	....	....	1	....	....	....	....	....	....	....	2	....	....	1	....	2	....	25 A.
		A.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	7	39	28	4	....	....	....	....	....	....	7	1	17	6	24	15	....	153 T.
Mississippi	48	T.	8	....	4	9	....	....	1	....	9	....	....	....	7	....	1	6	3	13	....	....	....	....	4	8	1	....	....	....	....	....	....	74 T.
		A.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0 A.
Missouri	96	T.	....	....	6	....	....	6	16	25	13	....	....	....	1	6	....	11	21	24	2	....	....	....	....	....	....	17	1	7	18	23	....	197 T.
		A.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0 A.
Montana	26	T.	....	1	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0 T.
		A.	....	....	....	....	....	1	....	....	....	....	....	2	....	....	....	....	1	....	....	....	1	1	....	....	....	9	3	1	....	....	....	17 A.
Nebraska	70	T.	....	1	....	....	....	....	9	....	....	....	....	....	2	....	....	2	7	5	....	....	....	....	....	4	1	7	4	8	4	4	....	58 T.
		A.	....	....	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1 A.
Nevada	48	T.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	3	2	....	....	2	....	....	....	....	....	....	7 T.
		A.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0 A.
New Hampshire	28	T.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	5	....	1	....	4	....	....	....	1	....	....	1	....	11 T.
		A.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0 A.
New Jersey	58	T.	....	....	....	9	2	3	1	....	....	1	....	....	....	....	....	....	1	....	....	....	....	....	2	2	....	1	1	....	1	....	....	12 A.
		A.	....	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	14	7	....	....	....	....	....	....	11	....	....	....	....	44 T.
New Mexico	26	T.	....	....	....	....	....	....	....	1	....	....	1	1	....	....	....	....	1	....	....	....	....	....	....	1	....	....	....	....	....	....	....	2 A.
		A.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	4 T.
New York	81	T.	....	....	....	5	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0 A.
		A.	....	....	....	....	....	1	....	....	....	....	....	3	....	....	....	....	4	....	4	26	7	1	....	....	1	5	....	1	1	....	1	43 T.
North Carolina	58	T.	2	....	....	4	....	....	....	....	....	5	....	....	....	....	....	....	2	3	8	14	4	....	2	....	....	4	3	2	7	....	....	60 T.
		A.	1	....	....	....	....	....	....	2	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1 A.
North Dakota	37	T.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0 T.
		A.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0 A.
Ohio	139	T.	....	....	1	....	....	2	....	1	....	....	....	2	....	....	....	4	2	....	1	....	....	....	4	4	....	2	5	1	5	....	....	30 T.
		A.	....	....	2	....	....	1	....	....	....	....	....	13	....	....	....	....	1	9	36	14	1	1	....	....	1	....	20	46	22	1	....	171 T.
Oklahoma	19	T.	....	....	....	....	....	1	....	3	....	....	....	....	2	....	....	....	2	1	2	....	....	1	....	....	....	....	....	4	3	1	....	20 T.
		A.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0 A.
Oregon	73	T.	....	2	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	2	3	....	....	7	....	....	1	....	....	....	15 T.
		A.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....	....	....	....	1 A.
Pennsylvania	85	T.	....	....	....	8	.1	....	....	....	....	....	....	....	....	....	....	....	....	11	31	4	....	....	....	....	....	5	16	....	....	....	....	76 T.
		A.	....	....	....	....	....	....	....	....	....	....	....	....	....	2	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	2 A.
Rhode Island	8	T.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	6	....	....	....	1	....	....	....	....	7 T.
		A.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0 A.
South Carolina	43	T.	....	....	....	7	....	....	....	2	....	1	....	....	....	....	....	....	1	8	15	17	1	....	....	....	....	1	....	....	10	....	....	63 T.
		A.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0 A.
South Dakota	45	T.	....	....	....	....	1	....	1	....	....	....	....	....	1	....	6	7	6	1	....	....	....	1	....	3	3	3	5	6	3	....	47 T.
		A.	....	....	....	....	....	....	1	....	....	....	1	....	....	....	1	....	3	7	7	2	....	....	....	....	....	5	2	2	8	2	....	70 T.
Tennessee	41	T.	9	....	4	6	....	....	3	....	8	1	....	....	1	....	....	....	3	7	7	2	....	....	....	....	....	....	....	....	....	....	....	0 T.
		A.	....	....	3	3	2	4	4	3	6	....	....	3	8	4	....	3	5	5	1	1	....	1	....	2	....	3	2	....	12	11	....	86 T.
Texas	72	T.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....	....	....	1	....	....	....	....	....	....	2 T.
		A.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0 A.
Utah	37	T.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0 T.
		A.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	2 A.
Vermont	15	T.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0 T.
		A.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	7	4	1	....	....	....	....	1	2	1	....	....	....	16 A.
Virginia	40	T.	2	....	....	1	....	....	....	....	1	....	....	....	....	....	....	....	2	....	1	15	6	....	....	....	....	1	14	13	5	....	....	59 T.
		A.	....	....	....	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1 A.
Washington	47	T.	....	....	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....	....	....	....	1	....	....	....	5	....	....	....	....	....	....	7 T.
		A.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0 A.
West Virginia	37	T.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	3	10	5	1	....	....	....	....	....	10	7	8	....	....	....	45 T.
		A.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0 A.
Wisconsin	63	T.	....	....	....	....	....	2	3	....	....	....	....	19	1	....	5	21	10	3	....	....	1	....	....	....	....	27	10	10	17	....	104 T.
		A.	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....	....	1	....	....	....	....	1	....	1	....	1	....	....	....	1	....	30 A.
Wyoming	15	T.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	5 T.
		A.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....	....	....	....	....	2	....	1	....	....	....	....	5 A.
Sums	2,603	T.	34	8	42	78	16	20	35	104	83	24	2	13	27	48	8	50	196	194	152	175	55	34	42	76	49	66	164	221	214	155	....	2387 T.
		A.	1	0	3	0	2	16	15	0	1	0	0	67	3	1	2	1	19	2	0	0	1	1	5	7	13	5	10	7	5	19	....	207 A.

STATE WEATHER SERVICES.

[*Temperature in degrees Fahrenheit; precipitation, including melted snow, in inches and hundredths.*]

The following extracts and summaries are republished from reports for April, 1894, of the directors of the State Weather Services. The Maryland service includes Delaware and the District of Columbia. The New England service includes the six New England States. The organization of a service for Alaska, under the director of the California State service, is contemplated.

ALABAMA.

Temperature.—The mean was 1.3 above the normal; maximum, 98, at Union, 17th; minimum, 31, at Newburg, 12th.

Precipitation.—The average was 1.64 below the normal; greatest monthly, 6.63, at Cordova; least monthly, 0.48, at Opelika.

Wind.—Prevailing direction, south.—*F. P. Chaffee, Local Forecast Official, Weather Bureau, Montgomery, director.*

ARIZONA.

Temperature.—The mean was 3.0 above the normal; maximum, 99, at Red Rock, 8th, and at Yuma, 25th; minimum, 15, at Whipple Barracks, 18th; greatest monthly range, 70, at Whipple Barracks; least monthly range, 45, at Oracle.

Precipitation.—The average was 0.4 below the normal; greatest monthly, 0.80, at Show Low; least, 0.00, at 21 stations.

Wind.—Prevailing direction, southwest..—*W. R. Burrows, Observer, Weather Bureau, Tucson, director.*

ARKANSAS.

Temperature.—The mean was 0.2 above the normal; maximum, 91, at Forrest, Helena, and Ozark, 16th, and at Corning, 29th; minimum, 30, at Pocahontas, 1st; greatest monthly range, 59, at Hot Springs; least monthly range, 43, at Washington.

Precipitation.—The average was 1.40 above the normal; greatest monthly, 12.73, at Washington; least, 1.29, at Conway.

Wind.—Prevailing direction, south.—*F. H. Clarke, Local Forecast Official, Weather Bureau, Little Rock, director; G. G. Harkness, Observer, Weather Bureau, assistant.*

CALIFORNIA.

Temperature.—The mean was 1.9 above the normal; maximum, 103, at Salton, 20th; minimum, 15, at Boca, 27th; greatest monthly range, 63, at Pleasanton; least monthly range, 27, at Point Lobos.

Precipitation.—The average was 1.7 below the normal; greatest monthly, 4.41, at Crescent City; least, 0.00, at a number of places.

Wind.—Prevailing direction, west-northwest.—*J. A. Barwick, Observer, Weather Bureau, Sacramento, director.*

COLORADO.

Temperature.—The mean was 1.0 above the normal; maximum, 92, at Cheyenne Wells, 22d; minimum, —5, at Pikes Peak, 9th, and at Breckenridge, 3d; greatest monthly range, 77, at Julesburg; least monthly range, 38, at Pikes Peak.

Precipitation.—The average was 0.60 below the normal; greatest monthly, 4.66, at Breckenridge; least monthly, 0.00, at Delta.

Wind.—Prevailing direction, west.—*G. A. Loveland, Observer, Weather Bureau, Denver, director.*

CONNECTICUT.

Temperature.—The mean was 0.4 above the normal; maximum, 77, at Canton, Middletown, and North Grosvenor Dale, 28th; minimum, 12, at North Grosvenor Dale, 3d; greatest monthly range, 65, at North Grosvenor Dale; least monthly range, 46, at New London.

Precipitation.—The average was 0.70 below the normal; greatest monthly, 4.59, at Colchester; least monthly, 1.82, at Norwalk.

Wind.—Prevailing direction, south.—*J. Warren Smith, Weather Bureau, Boston, Mass., director.*

DELAWARE.

Temperature.—Maximum, 82, at Kirkwood, 28th; minimum, 21, at Newark, 3d; greatest monthly range, 57, at Newark; least monthly range, 50, at Milford.

Precipitation.—Greatest monthly, 4.40, at Milford; least monthly, 3.38, at Newark and Wilmington.—*C. P. Cronk, Observer, Weather Bureau, Baltimore, Md., in charge.*

FLORIDA.

Temperature.—The mean was 1.0 below the normal; maximum, 93, at Kissimmee, 16th, and at Plant City, 17th; minimum, 41, at Orange City, 13th; greatest monthly range, 49, at Orange City; least monthly range, 17, at Key West.

Precipitation.—The average was 1.47 below the normal; greatest monthly, 3.98, at Moseley Hall; least monthly, 0.03, at Key West and Ocala.

Wind.—Prevailing direction, southeast.—*E. R. Demain, Observer, Weather Bureau, Jacksonville, director.*

GEORGIA.

Temperature.—Maximum, 95, at Columbus, 29th, and at Americus, 18th; minimum, 28, at Clayton, 3d; greatest monthly range, 59, at Millen; least monthly range, 42, at Marshallville.

Precipitation.—Greatest monthly, 4.73, at Morgan; least monthly, 0.64, at Savannah.

Wind.—Prevailing directions, west and northwest.—*Park Morrill, Local Forecast Official, Weather Bureau, Atlanta, director.*

IDAHO.

Temperature.—Maximum, 87, at Payette, 20th; minimum, 6, at Lake, 1st; greatest monthly range, 65, at Payette; least monthly range, 36, at Atlanta Hill.

Precipitation.—Greatest monthly, 3.55, at Garden Valley; least monthly, 0.45, at Kootenai.

Wind.—Prevailing direction, northwest.—*J. H. Smith, Observer, Weather Bureau, Idaho Falls, director.*

ILLINOIS.

Temperature.—The mean was 2.1 above the normal; maximum, 95, at Rushville, 28th; minimum, 23, at Dixon and Decatur, 2d.

Precipitation.—The average was 0.85 below the normal; greatest monthly, 4.70, at Fort Sheridan; least monthly, 1.03, at Streator.

Wind.—Prevailing direction, southeast.—*John Craig, Observer, Weather Bureau, Springfield, director.*

INDIANA.

Temperature.—The mean was 1.0 above the normal; maximum, 94, at Vincennes, 30th; minimum, 23, at Hawpatch, 21st; greatest monthly range, 62, at Vincennes and Rockville; least monthly range, 50, at New Albany.

Precipitation.—The average was 0.81 below the normal; greatest monthly, 7.70, at Marengo; least monthly, 1.08, at Union City.

Wind.—Prevailing direction, southwest.—*Prof. H. A. Huston, Lafayette, director; C. F. R. Wappenhans, Local Forecast Official, Weather Bureau, assistant.*

IOWA WEATHER AND CROP SERVICE.

Temperature.—The mean was 3.0 above the normal; maximum, 93, at Greenfield, 28th; minimum, 12, at Forest City, 6th; greatest monthly range, 74, at Atlantic; least monthly range, 46, at Sac City.

Precipitation.—Greatest monthly, 6.98, at Hampton; least monthly, 0.55, at Seymour.

Wind.—Prevailing direction, southeast.—*J. R. Sage, Des Moines, director; G. M. Chappel, Local Forecast Official, Weather Bureau, assistant.*

KENTUCKY.

Temperature.—The mean was 0.2 above the normal; maximum, 94, at Fords Ferry, 29th and 30th; minimum, 23, at Sandy Hook, 3d; greatest monthly range, 64, at Fords Ferry; least monthly range, 46, at Edmonton.

Precipitation.—The average was 0.94 below the normal; greatest monthly, 7.21 at Earlington; least monthly, 1.56, at Caddo.

Wind.—Prevailing direction, southwest.—*Frank Burke, Local Forecast Official, Weather Bureau, Louisville, director.*

LOUISIANA.

Temperature.—The mean was 0.8 above the normal; maximum, 93, at Schriever, 28th; minimum, 33, at Girard, 1st; greatest monthly range, 56, at Girard; least monthly range, 21, at Port Eads.

Precipitation.—The average was 0.13 below the normal; greatest monthly, 9.55, at Delhi; least monthly, 1.34, at Wallace.

Wind.—Prevailing direction, south.—*R. E. Kerkam, Local Forecast Official, Weather Bureau, New Orleans, director.*

MAINE.

Temperature.—The mean was 0.6 above the normal; maximum, 84, at Farmington, 27th; minimum, 1, at Fort Kent, 3d; greatest monthly range, 73, at Houlton; least monthly range, 48, at Eastport.

Precipitation.—The average was 0.66 below the normal; greatest monthly, 3.12, at Cornish; least monthly, 0.72, at Houlton and Fairfield.

Wind.—Prevailing direction, northeast.—*J. Warren Smith, Weather Bureau, Boston, Mass., director.*

MARYLAND.

Temperature.—The mean was 0.9 below the normal; maximum, 84, at Charlotte Hall, 28th, and at Benedict, 29th; minimum, 9, at Sunnyside, 3d; greatest monthly range, 69, at Sunnyside; least monthly range, 48, at Woodstock, Darlington, and Solomons.

Precipitation.—Greatest monthly, 5.79, at Oakland; least monthly, 1.59, at Cumberland.

Wind.—Prevailing direction, northwest.—*Dr. William B. Clark, Johns Hopkins University, Baltimore, director; C. P. Cronk, Observer, Weather Bureau, in charge.*

MASSACHUSETTS.

Temperature.—The mean was 1.6 above the normal; maximum, 82, at Lowell (*c*), 27th; minimum, 9, at Ludlow, 3d; greatest monthly range, 70, at Lake Cochituate; least monthly range, 33, at Woods Holl.

Precipitation.—The average was 0.25 below the normal; greatest monthly, 5.51, at Kendall Green; least monthly, 0.80, at Newburyport.

Wind.—Prevailing direction, southwest.—*J. Warren Smith, Weather Bureau, Boston, director.*

MICHIGAN.

Temperature.—The mean was 1.9 above the normal; maximum, 89, at Paris, 30th; minimum, 10, at Grayling and Rockland, 2d; greatest monthly range, 75, at Grayling and Paris; least monthly range, 44, at Alpena and Arbela.

Precipitation.—The average was 0.16 below the normal; greatest monthly, 3.95, at Parkville; least monthly, 0.35, at Charlevoix.

Wind.—Prevailing direction, southwest.—*E. A. Evans, Local Forecast Official, Weather Bureau, Detroit, director.*

MINNESOTA.

Temperature.—The mean was 4.5 above the normal; maximum, 85, at Bingham Lake, 26th; minimum, 10, at Pokegama Falls, 12th; greatest monthly range, 63, at St. Vincent, Airlie, and Marfield; least monthly range, 46, at Clear Water.

Precipitation.—The average was 2.50 above the normal; greatest monthly, 7.66, at Long Prairie; least monthly, 2.01, at Airlie.

Wind.—Prevailing direction, southeast.—*E. A. Beals, Observer, Weather Bureau, Minneapolis, director.*

MISSISSIPPI.

Temperature.—The mean was 2.7 above the normal; maximum, 98, at Yazoo City, 18th; minimum, 35, at Clarksdale and Waynesboro, 1st, and at French Camps, 2d; greatest monthly range, 60, at Waynesboro; least monthly range, 31, at Bay St. Louis and Moss Point.

Precipitation.—The average was 2.70 below the normal; greatest monthly, 7.21, at Port Gibson; least monthly, 1.79, at Kosciusko.—*R. J. Hyatt, Local Forecast Official, Weather Bureau, Vicksburg, director.*

MISSOURI.

Temperature.—The mean was 0.9 above the normal; maximum, 95, at Harrisonville, 28th; minimum, 22, at Potosi, 6th; greatest monthly range, 67, at Greendale; least monthly range, 39, at Arthur.

Precipitation.—The average was 0.29 below the normal; greatest monthly, 6.84, at Phillipsburg; least monthly, 0.90, at Pickering.

Wind.—Prevailing direction, southeast.—*A. E. Hackett, Observer, Weather Bureau, Columbia, director.*

MONTANA.

Temperature.—The mean was 1.0 above the normal; maximum, 86, at Glendive, 21st; minimum, 4, at Fort Logan, 17th; greatest monthly range, 72, at Glasgow; least monthly range, 44, at Bozeman.

Precipitation.—The average was 0.36 above the normal; greatest monthly, 3.23, at White Sulphur Springs; least monthly, 0.31, at Radersburg.

Wind.—Prevailing direction, northwest.—*J. M. Sherier, Observer, Weather Bureau, Helena, director.*

NEBRASKA.

Temperature.—The mean was 3.1 above the normal; maximum, 98, at Arborville, 28th; minimum, 11, at Fort Sidney, 9th; greatest monthly range, 76, at Weeping Water; least monthly range, 38, at Burwell.

Precipitation.—The average was 0.55 below the normal; greatest monthly, 4.39, at Fort Sidney; least monthly, 0.36, at Indianola.

Wind.—Prevailing direction, northwest.—*George E. Hunt, Local Forecast Official, Weather Bureau. Omaha, director.*

NEVADA.

Temperature.—The mean was 0.9 below the normal; maximum, 90, at Downeyville, 10th; minimum, 10, at Stofiel, 3d; greatest monthly range, 69, at Sunnyside; least monthly range, 43, at Battle Mountain and Toano.

Precipitation.—Greatest monthly, 2.08, at Stofiel; least monthly, 0.00, at Sunnyside.

Wind.—Prevailing direction, southwest.—*Prof. Charles W. Friend, Carson City, director; F. A. Carpenter, Observer, Weather Bureau, assistant.*

NEW HAMPSHIRE.

Temperature.—The mean was 2.2 above the normal; maximum, 80, at Nashua, 27th; minimum, 8, at Bethlehem and Stratford, 3d; greatest monthly range, 69, at Bethlehem; least monthly range, 51, at Hanover.

Precipitation.—The average was 0.38 below the normal; greatest monthly, 3.52, at Antrim; least monthly, 0.97, at Alstead.

Wind.—Prevailing direction, north.—*J. Warren Smith, Weather Bureau, Boston, Mass., director.*

NEW JERSEY.

Temperature.—The mean was 2.4 above the normal; maximum, 88, at Vineland, 28th; minimum, 10, at Charlotteburg, 3d; greatest monthly range, 67, at Vineland; least monthly range, 42, at Atlantic City.

Precipitation.—The average was 0.38 below the normal; greatest monthly, 4.86, at Hightstown; least monthly, 1.71, at Atlantic City.

Wind.—Prevailing direction, northwest.—*E. W. McGann, Observer, Weather Bureau, New Brunswick, director.*

NEW MEXICO.

Temperature.—Maximum, 92, at Rincon, 25th; minimum, 10, at Chama, 28th; greatest monthly range, 68, at Chama; least monthly range, 45, at Galisteo.

Precipitation.—Greatest monthly, 1.48, at Santa Fe; least monthly, 0.00, at several stations.

Wind.—Prevailing direction, west.—*H. B. Hersey, Observer, Weather Bureau, Santa Fe, director.*

NEW YORK.

Temperature.—The mean was 1.3 above the normal; maximum, 88, at Rome, 30th; minimum, 7, at Number Four, 3d; greatest monthly range, 68, at Rome; least monthly range, 42, at Willets Point.

Precipitation.—The average was 0.17 above the normal; greatest monthly, 8.09, at Alfred Center; least monthly, 0.65, at West Chazy.

Wind.—Prevailing direction, northwest.—*Prof. E. A. Fuertes, Dean of the College of Civil Engineering, Cornell University, Ithaca, director; R. M. Hardinge, Observer, Weather Bureau, assistant.*

NORTH CAROLINA.

Temperature.—The mean was 0.4 below the normal; maximum, 89, at Washington, 28th; minimum, 22, at Bakersville, 7th; greatest monthly range, 62, at Saxon; least monthly range, 32, at Hatteras.

Precipitation.—The average was 2.09 below the normal; greatest monthly, 3.13, at Bryson City; least monthly, 0.65, at Sloan.

Wind.—Prevailing direction, southwest.—*Dr. Herbert B. Battle, Raleigh, director; C. F. von Herrmann, Observer, Weather Bureau, assistant.*

NORTH DAKOTA.

Temperature.—The mean was 2.8 above the normal; maximum, 92, at Portal, 28th; minimum, 5, at Woodbridge, 1st; greatest monthly range, 77, at Williamsport; least monthly range, 33, at Churchs Ferry.

Precipitation.—The average was 1.38 above the normal; greatest monthly, 7.48, at Forman; least monthly, 1.94, at McKinney.

Wind.—Prevailing direction, southeast.—*B. H. Bronson, Observer, Weather Bureau, Bismarck, director.*

OHIO WEATHER AND CROP SERVICE.

Temperature.—The mean was 0.6 above the normal; maximum, 97, at Portsmouth, 30th; minimum, 16, at Garrettsville, Green Hill, and Orangeville, 3d; greatest monthly range, 69, at Benton Ridge; least monthly range, 50, at Millport and New Paris.

Precipitation.—The average was 0.71 below the normal; greatest monthly, 4.71, at New Alexandria; least monthly, 1.25, at Fostoria and Vickery.

Wind.—Prevailing direction, southwest.—*L. N. Bonham, Columbus, director; C. M. Strong, Observer, Weather Bureau, assistant.*

OKLAHOMA.

Temperature.—The mean was 2.1 above the normal; maximum, 97, at Mangum, 23d; minimum, 28, at Fort Supply, 3d, and at Pond Creek, 10th; greatest monthly range, 64, at Fort Supply; least monthly range, 33, at Anadarko.

Precipitation.—The average was 1.34 above the normal; greatest monthly, 7.92, at Eufaula; least monthly, 2.45, at Anadarko.

Wind.—Prevailing direction, south.—*J. I. Widmeyer, Observer, Weather Bureau, Oklahoma City, director.*

OREGON.

Temperature.—The mean was 1.6 above the normal; maximum, 85, at Grants Pass, 19th; minimum, 8, at Burns, 17th; greatest monthly range, 63, at Fife; least monthly range, 24, at Salem (*b*).

Precipitation.—The average was 0.85 below the normal; greatest monthly, 9.73, at Glenora; least monthly, trace, at Klamath Falls.

Wind.—Prevailing direction, southwest.—*Hon. H. E. Hayes, Master State Grange, Portland, director; S. M. Blanford, Observer, Weather Bureau, assistant.*

PENNSYLVANIA.

Temperature.—The mean was normal; maximum, 83, at Kilmer, 27th; minimum, 5, at Drifton, 5th; greatest monthly range, 69, at Dyberry; least monthly range, 49, at Harrisburg.

Precipitation.—The average was 0.34 above the normal; greatest monthly, 10.00, at Somerset; least monthly, 1.69, at Altoona.

Wind.—Prevailing direction, northwest.—*Under direction of the Franklin Institute, Philadelphia: W. P. Tatham, director; T. F. Townsend, Local Forecast Official, Weather Bureau, assistant.*

RHODE ISLAND.

Temperature.—The mean was 0.6 above the normal; maximum, 78, at Pawtucket, 27th; minimum, 18, at Kingston, 2d; greatest monthly range, 57, at Providence (*a*); least monthly range, 38, at Block Island.

Precipitation.—The average was 0.36 above the normal; greatest monthly, 4.30, at Bristol; least monthly, 3.31, at Pawtucket.—*J. Warren Smith, Weather Bureau, Boston, Mass., director*

SOUTH CAROLINA.

Temperature.—Maximum, 95, at Simpsonville, 29th; minimum, 30, at Hollands Store, 13th, and at Yorkville, 3d; greatest monthly range, 60, at Simpsonville; least monthly range, 38, at Port Royal.

Precipitation.—The average was 1.22 below the normal; greatest monthly, 6.05, at Cheraw; least monthly, 0.53, at Charleston.

Wind.—Prevailing direction, southwest.—*J. W. Bauer, Observer, Weather Bureau, Columbia, director.*

SOUTH DAKOTA.

Temperature.—The mean was 4.1 above the normal; maximum, 99, at Tyndall, 28th; minimum, 7, at Brookings, 1st; greatest monthly range, 78, at Tyndall; least monthly range, 44, at Gale.

Precipitation.—The average was 1.10 above the normal; greatest monthly, 7.29, at Webster; least monthly, 1.55, at Fort Sully.

Wind.—Prevailing direction, northwest.—*S. W. Glenn, Local Forecast Official, Weather Bureau, Huron, director.*

TENNESSEE WEATHER AND CROP SERVICE.

Temperature.—The mean was 0.2 below the normal; maximum, 92, at Hohenwald, 29th; minimum, 26, at Bristol, 12th; greatest monthly range, 64, at Hohenwald; least monthly range, 41, at Savannah.

Precipitation.—The average was 0.35 below the normal; greatest monthly, 8.45, at Memphis; least monthly, 1.48, at Strawberry Plains.

Wind.—Prevailing direction, south.—*J. B. Marbury, Local Forecast Official, Weather Bureau, Nashville, director.*

TEXAS.

Temperature.—The mean was 3.2 above the normal; maximum, 104, at Fort Ringgold and Camp Eagle Pass, 25th; minimum, 22, at Hartley, 4th and 15th; greatest monthly range, 70, at Fort Hancock; least monthly range, 22, at Galveston.

Precipitation.—The average was 1.13 above the normal; greatest monthly, 10.34, at Fredericksburg; least monthly, trace, at Columbia and Hale Center.

Wind.—Prevailing direction, south.—*D. D. Bryan, Galveston, director; I. M. Cline, Local Forecast Official, Weather Bureau, assistant.*

UTAH.

Temperature.—Maximum, 91, at Saint George, 10th; minimum, 4, at Silver Lake, 8th; greatest monthly range, 69, at Fillmore; least monthly range, 46, at Logan.

Precipitation.—Greatest monthly, 3.00, at Silver Lake; least monthly, trace, at Fort Du Chesne and Losee.

Wind.—Prevailing direction, northwest.—*G. N. Salisbury, Observer, Weather Bureau, Salt Lake City, director.*

VERMONT.

Temperature.—The mean was 3.9 above the normal; maximum, 78, at Enosburg Falls, 20th, and at Woodstock, 27th; minimum, 5, at Simonsville, 3d; greatest monthly range, 66, at Enosburg Falls and Woodstock; least monthly range, 52, at Burlington.

Precipitation.—The average was 0.79 below the normal; greatest monthly, 2.66, at Jacksonville; least monthly, 0.86, at Burlington.

Wind.—Prevailing direction, north.—*J. Warren Smith, Weather Bureau, Boston, Mass., director.*

VIRGINIA.

Temperature.—Maximum, 92, at Richmond, 28th; minimum, 19, at Dale Enterprise and Hot Springs, 3d; greatest monthly range, 69, at Avon; least monthly range, 43, at Cape Charles and Cape Henry.

Precipitation.—Greatest monthly, 4.20, at Birdsnest; least monthly, 0.75, at Christiansburg.

Wind.—Prevailing direction, northwest.—*Dr. E. A. Craighill, Lynchburg, director; J. N. Ryker, Observer, Weather Bureau, assistant.*

WASHINGTON.

Temperature.—The mean was 3.3 below the normal; maximum, 87, at Connell, 20th; minimum, 20, at Hunters, 16th, at Wenatchee Lake, 3d, and at Waterville, 15th; greatest monthly range, 65, at Connell; least monthly range, 22, at Tatoosh Island.

Precipitation.—The average was 1.42 above the normal; greatest monthly, 15.57, at Neah Bay; least monthly, 0.14, at Bridgeport.

Wind.—Prevailing direction, southwest.—*H. F. Alciatore, Observer, Weather Bureau, Seattle, director.*

WEST VIRGINIA.

Temperature.—Maximum, 90, at Spencer, 18th and 19th; minimum, 14, at Pleasant Hill, 3d; greatest monthly range, 64, at Pleasant Hill, Burlington, Grafton, and Marlinton; least monthly range, 51, at Monarch.

Precipitation.—Greatest monthly, 5.30, at Beverly; least monthly, 1.97, at Hinton.

Wind.—Prevailing direction, west.—*H. W. Richardson, Observer, Weather Bureau, Parkersburg, director.*

WISCONSIN.

Temperature.—The mean was 3.0 above the normal; maximum, 89, at Black River Falls, 26th; minimum, 6, at Florence, 2d; greatest monthly range, 72, at Black River Falls; least monthly range, 40, at Milwaukee.

Precipitation.—The average was 1.00 above the normal; greatest monthly, 6.61, at Cadiz; least monthly, 1.41, at Meadow Valley.

Wind.—Prevailing direction, southeast.—*W. L. Moore, Local Forecast Official, Weather Bureau, Milwaukee, director.*

WYOMING.

Temperature.—The mean was 5.0 above the normal; maximum, 81, at Sheridan, 21st; minimum, 6, at Camp Pilot Butte, 3d; greatest monthly range, 68, at Camp Pilot Butte; least monthly range, 44, at Lander.

Precipitation.—The average was 0.47 below the normal; greatest monthly, 2.83, at Lusk; least monthly, 0.29, at La Barge.

Wind.—Prevailing direction, northwest.—*E. M. Ravenscraft, Observer Weather Bureau, Cheyenne, director.*

INLAND NAVIGATION.

STAGE OF WATER IN RIVERS.

The following table shows the danger point at each river station; the highest and lowest stages for the month of April, 1894, with the dates of occurrence, and the monthly range:

Heights of rivers above low-water mark, April, 1894.

Stations.	Danger-point on gauge.	Highest water.		Lowest water.		Monthly range.
		Height.	Date.	Height.	Date.	
Red River.	*Feet.*	*Feet.*		*Feet.*		*Feet.*
Shreveport, La	29.2	34.5	2	17.8	29	16.7
Arkansas River.						
Fort Smith, Ark	22.0	11.7	21, 26, 27	2.4	8	9.3
Little Rock, Ark	23.0	14.1	28	7.1	10	7.0
Missouri River.						
Pierre, S. Dak	13.0	.....	.....	.....	.....	.....
Sioux City, Iowa	18.7	16.0	13	8.4	3	7.6
Omaha, Nebr	18.0	15.1	14	6.7	1	8.4
Kansas City, Mo	21.0	18.5	16	6.8	1	11.7
Mississippi River.						
St. Paul, Minn	14.0	10.6	25	2.9	4, 7–9	7.7
La Crosse, Wis	10.0	11.0	28	5.1	8	5.9
Dubuque, Iowa	16.0	11.4	30	6.0	11–13	5.4
Davenport, Iowa	15.0	7.0	30	4.6	13–19	2.4
Keokuk, Iowa	14.0	6.5	6	4.4	16, 20	2.1
Hannibal, Mo	17.0	7.0	6, 8	5.4	20, 21	1.6
St. Louis, Mo	30.0	18.7	30	9.8	7	8.9
Cairo, Ill	40.0	30.8	21	21.5	30	9.3
Memphis, Tenn	33.0	23.9	24	17.7	30	6.2
Vicksburg, Miss	41.0	40.9	2	34.5	21	6.4
New Orleans, La	13.0	14.6	6	13.1	24–26	1.5
Ohio River.						
Parkersburg, W. Va	38.0	16.1	14	8.0	6, 8	8.1
Cincinnati, Ohio	45.0	25.3	15, 16	14.2	9, 10	11.1
Louisville, Ky	24.0	10.0	16	6.9	8	3.1

Heights of rivers—Continued.

Stations.	Danger-point on gauge.	Highest water.		Lowest water.		Monthly range.
		Height.	Date.	Height.	Date.	
Cumberland River.	*Feet.*	*Feet.*		*Feet.*		*Feet.*
Nashville, Tenn	40.0	23.0	14, 15	5.9	30	17.1
Tennessee River.						
Chattanooga, Tenn	33.0	8.5	13	4.0	29, 30	4.5
Knoxville, Tenn	29.0	.....	.....	.....	.....	.....
Monongahela River.						
Pittsburg, Pa	22.0	12.2	12	4.2	6, 7	8.0
Savannah River.						
Augusta, Ga	32.6	11.2	22	7.2	28, 29	4.0
Willamette River.						
Portland, Oregon	15.0	17.8	30	11.2	21, 22, 24	6.6
Susquehanna River.						
Harrisburg, Pa	17.0	10.0	25	2.8	8–11	7.2
Alabama River.						
Montgomery, Ala	48.0	11.0	12	3.5	30	7.5
James River.						
Lynchburg, Va	18.0	1.1	11	0.8	5, 26–30	0.3
Sacramento River.						
Red Bluff, Cal	22.0	10.4	1	4.5	30	5.9
Sacramento, Cal	25.0	22.6	12	20.2	1	2.4
Des Moines River.						
Des Moines, Iowa	19.0	3.4	30	3.2	6–8, 10–17	0.2

FLOODS.

The above table shows that in the rivers here recorded the waters during April rose above the danger line at Shreveport, La., where the Red River was highest on the 2d; La Crosse, Wis., where the Mississippi was highest on the 28th; Vicksburg, Miss., where the river touched the danger line on the 2d;

New Orleans, La., where it was highest on the 6th, and Portland, Oreg., where the river was highest on the 30th and still rising. The high water at Shreveport and Vicksburg was largely due to the floods of the 18th to the 21st of March in Arkansas.

NAVIGATION OF RIVERS AND HARBORS.

The following special reports relative to ice and navigation have been received:

Detroit River.—Detroit, Mich., 1st, navigation on the lower Lakes was opened to-day.

Mississippi River.—St. Cloud, Minn., 6th, clear of ice.

Missouri River.—Sioux City, Iowa, 1st, very high and full of ice.

Lake Erie.—Buffalo, N. Y., 1st, navigation opened.

Lake Michigan.—Green Bay, Wis., 1st, the first boat of the season left port. Chicago, Ill., 1st, navigation opened.

Lake Ontario.—Rochester, N. Y., 1st, navigation opened.

Lake Superior.—Sault Ste. Marie, Mich., 17th, navigation opened. Duluth, Minn., 18th, navigation opened.

OBSERVATIONS ON THE GREAT LAKES.

REPORTS FROM VESSELS.

Navigation having opened about April 1, the Lake Marine Section of the Forecast Division has received reports from the captains of eighteen vessels navigating the Great Lakes. The following miscellaneous items are extracted from their reports:

Capt. H. Zealand, steamship *Simon Lanzell*, April 24, central part of Lake Huron: Aurora began 8.30; very bright and dancing at 11 p. m.; receded at midnight. April 25, 7.50 p. m., we sighted, by the help of mirage, Stannard Rock Light, which was distant 58 miles by chart measurement. We were on course from Whitefish Point to Manitou Island and had Caribou Island abeam. Aurora began at 9.10; quit at 10.45.

Capt. A. B. Drake, steamship *Thomas Maythan*, April 25, 12.30 a. m., Stannard Rock Light not lighted.

NOTE.—Capt. Zealand's hypothesis that the light was visible by the help of mirage, assumes, of course, that he was correct in estimating his own location. Capt. Drake's statement that this light was not lighted at 12.30 a. m. should be taken in connection with the possible existence of "mirage," since the same optical phenomenon that causes the light to be visible to distant vessels may cause it to be invisible to nearer vessels. In general, the noise from the fog horn and the light from a lighthouse are equally subject to the laws of irregular refraction and reflection by the atmosphere.

Capt. Edward Mooney, steamship *Wa-Wa-Tarn*," April 12, Milwaukee, aurora borealis display.

Capt. W. P. Robertson, steamship *Petroskoy*, April 24, Chicago, aurora borealis from 10 p. m. onward.

Capt. C. H. Lewis, steamship *John C. Gault*, April 12, Lake Erie, N. 52° 50′, W. 82°, 9.45 p. m., aurora very bright, bearing north-northwest to northeast; died out at 10.30 p. m.

Capt. W. A. Russell, steamship *William A. Proctor*, April 17, Ogdensburg, northern lights lasting about one-half hour. April 17, 12 miles west of Clayton, St. Lawrence River, 6. a. m., buoy in St. Lawrence not yet placed. 22d, 7.45 a. m., no buoy on Galloo Shoal.

REPORTS FROM U. S. LIFE-SAVING STATIONS.

Through the kind co-operation of the General Superintendent of the Life-Saving Service and the Secretary of the Treasury, the Weather Bureau has received 14 weekly transcripts of journals for the month of April from the keepers of 4 Life-Saving Stations on the Great Lakes. The following special notes by the respective keepers are extracted from these journals:

Middle Island, Lake Huron.—Donald McKenzie, keeper. April 12, northern lights to-night very brilliant from about 8 p. m. to midnight; 24th, northern lights 10 p. m. to midnight; 26th, northern lights 9.30 p. m. to midnight.

WRECKS ON THE GREAT LAKES.

The Weather Bureau has published a special report, with chart, showing the location of wrecks that have occurred on the Great Lakes during the years 1886–'93, inclusive. This report and chart show 227 wrecks, with a loss of 420 lives, and about $5,000,000 of property, distributed as follows: Lake Superior, 32 vessels; Lake Michigan, 85; Lake Huron, 44; Lake Erie, 50; Lake Ontario, 16. Of ten important wrecks that occurred during the years 1892 and 1893, seven occurred during stormy conditions, of which timely warning had been given by the Weather Bureau, and of the remaining three, two were due to fog.

The present editor notes that a remarkably small proportion of these wrecks seem to have occurred near large ports; thus, on Lake Superior, near Duluth and Marquette, only 2 are located; on Lake Michigan, near Chicago, Milwaukee, and Grand Haven, 4; on Lake Huron, near Port Huron, Saginaw, and Alpena, 3; on Lake Erie, near Toledo, Sandusky, Cleveland, Erie, Dunkirk, and Buffalo, 12; on Lake Ontario, near Oswego, 6. In all, 27 out 226.

SUNSHINE AND CLOUDINESS.

GENERAL REMARKS.

The quantity of sunshine, and probably of heat, received by the atmosphere above the cloud layer, is very nearly constant from year to year, but varies with the day and month. On the other hand, at the surface of the earth, the distribution of sunshine and, therefore, the resultant heat with its meteorological and biological consequences depends mostly on the distribution of cloudiness.

The *sunshine* is recorded automatically, either by its photographic or its thermal effects. The *cloudiness* is recorded by personal observations by the local observers.

SUNSHINE.

During the month an instrumental record of sunshine has been kept at 16 stations by means of the photographic sunshine recorder and at 21 stations by means of the thermometric sunshine recorder; the results of these observations are given in Table IV, which shows the actual percentage of sunshine received on the average of the month for any hour of local mean time (not seventy-fifth meridian mean time).

The stations recording the largest percentage of sunshine between the hours of 11 a. m. and 1 p. m., are: Baltimore, Md., 86; Colorado Springs, Colo., 91.5; Key West, Fla., 98; San Francisco, Cal., 87.5; Tucson, Ariz., 91.5; Vicksburg, Miss., 87.5.

The stations having the least percentage during these hours are: Bismarck, N. Dak., 45; Portland, Oreg., 45.5.

The general average sunshine for the whole month is given in the next to the last column of Table IV. The highest percentages are: Key West, Fla., 91; Tucson, Ariz., 86; Santa Fe, N. Mex., 79; San Francisco, Cal., 75.

The lowest percentages are: Portland, Oreg., 37; Bismarck, N. Dak., 47; Boston, Mass., 51; Des Moines, Iowa, 52.

CLOUDINESS.

The number of clear and cloudy days and the average cloudiness between sunrise and sunset, as based on numerous personal observations, are given for each Weather Bureau station in Table I. The complement of this average cloudiness gives the observer's estimated percentage of clear sky, and these

latter numbers are given in the last column of Table IV. On the average these personal estimates of clear sky are lower than the sunshine as recorded by the self-registers.

COMPARISON OF RECORDS.

The duration of direct sunshine is the quantity shown by the self-recording photographic or thermometric sunshine registers; the percentage of area of clear sky is the quantity shown by the complement of the observer's estimate of cloudiness. It is sometimes assumed that these numbers should agree but, as has been explained in previous REVIEWS, the relation between these numbers is rather complex; in general, the monthly averages agree best in cloudy climates and may differ widely in clear climates. In the following table the instrumental record for April and the observer's estimate for April are brought together, side by side, and in accordance with the results of previous months it is seen that the instrumental percentages of duration of sunshine are almost always larger than the observer's personal estimates of percentages of area of clear sky:

Difference between instrumental and personal observations of sunshine.

Photographic stations.	Instrumental.	Personal.	Difference.	Thermometric stations.	Instrumental.	Personal.	Difference.
Tucson, Ariz	86	78	8	Key West, Fla	91	73	18
Santa Fe, N. Mex.	79	65	14	Colorado Springs, Colo.	70	61	9
San Francisco, Cal	75	72	3	Vicksburg, Miss	68	65	3
Dodge City, Kans	74	69	5	Little Rock, Ark	68	52	16
Savannah, Ga.	73	57	16	Baltimore, Md	67	54	13
Denver, Colo	68	56	12	Chicago, Ill	64	51	13
Memphis, Tenn	67	66	1	Wilmington, N. C.	63	64	— 1
Kansas City, Mo	61	54	7	Philadelphia, Pa	62	50	12
Helena, Mont.	60	49	11	Salt Lake City, Utah	62	48	14
Galveston, Tex.	59	58	1	Columbus, Ohio	60	42	18
Washington, D. C	57	56	1	New York, N. Y	58	47	11
Cleveland, Ohio	57	47	10	Portland, Me	58	39	19
Cincinnati, Ohio.	56	50	6	New Haven, Conn	57	48	9
Bismarck, N. Dak	47	46	1	Rochester, N. Y	56	51	5
Portland, Oreg	37	33	4	Buffalo, N. Y	56	47	9
San Diego, Cal.	.....	60	.....	Detroit, Mich	55	45	10
Eastport, Me	.....	33	.....	Des Moines, Iowa	52	46	6
				Boston, Mass.	51	42	9
				New Orleans, La	.....	55	.....
				St. Louis, Mo.	.....	54	.....
				Louisville, Ky	.....	.....	.....

NOTES BY THE EDITOR.

OBSERVATIONS AT HONOLULU, HAWAIIAN ISLANDS.

Meteorological observations at Honolulu, Hawaiian Islands, for April, 1894, by Curtis J. Lyons, Meteorologist to the Government Survey.

Date.	Barometer at sea level. 9 a. m.	Barometer at sea level. 3 p. m.	Barometer at sea level. 9 p. m.	Temperature. 6 a. m.	Temperature. 2 p. m.	Temperature. 9 p. m.	Temperature. Minimum.	Temperature. Maximum.	Humidity. Relative. 9 a. m.	Humidity. Relative. 9 p. m.	Humidity. Absolute.	Wind. Direction.	Wind. Force.	Rain to 6 p. m.
	Ins.	*Ins.*	*Ins.*	°	°	°	°	°	*Pr. ct.*	*Pr. ct.*				*Ins.*
1	30.20	30.12	30.18	69	75	69	67	77	65	73	5.5	ne.	3	0.01
2	30.18	30.11	30.18	62	76	71	61	78	64	72	5.8	e., ne.	3	0.00
3	30.17	30.09	30.16	68	75	65	65	78	66	73	5.9	ne.	3	0.02
4	30.14	30.00	30.15	68	76	67	63	79	65	79	6.1	ne.	3	0.01
5	30.12	30.03	30.14	65	77	70	63	80	62	76	6.1	se.	2	0.00
6	30.12	30.07	30.15	67	78	68	63	79	70	85	6.6	se.	3	0.00
7	30.12	30.05	30.14	63	77	69	62	80	70	80	6.4	n., s.	1	0.01
8	30.12	30.05	30.13	63	79	70	63	82	70	79	6.6	s.	3	0.00
9	30.14	30.08	30.13	71	78	73	68	80	63	70	6.3	ne.	3	0.02
10	30.12	30.05	30.12	72	76	72	68	78	60	65	6.0	ne.	3	0.01
11	30.10	30.03	30.12	72	77	71	71	79	66	77	6.1	ne.	4	0.00
12	30.08	30.06	30.16	71	74	72	71	78	75	75	6.3	ne.	5	0.10
13	30.17	30.10	30.14	70	75	72	70	79	65	74	6.3	ne.	5	0.06
14	30.15	30.06	30.10	71	76	71	70	78	62	73	6.1	ne.	4	0.06
15	30.08	30.00	30.07	68	76	71	67	79	66	70	6.1	ne.	4	0.14
16	30.08	30.00	30.07	79	77	70	67	79	66	75	6.1	ne.	4	0.12
17	30.10	30.04	30.11	70	75	71	68	77	73	77	6.4	ne.	4	0.26
18	30.11	30.01	30.08	68	75	72	68	75	80	77	7.0	ne.	5	0.26
19	30.07	30.04	30.12	72	76	72	71	78	77	79	6.8	ne.	5	0.18
20	30.15	30.13	30.18	71	75	72	70	77	75	70	6.5	ne.	4, 6	0.18
21	30.22	30.16	30.22	71	75	70	71	77	63	74	5.8	e., ne.	5	0.05
22	30.22	30.14	30.22	69	76	69	67	78	63	80	5.9	ne.	4	0.02
23	30.19	30.12	30.20	68	72	69	66	75	69	75	5.9	ne.	5	0.48
24	30.20	30.14	30.22	68	74	71	67	76	60	69	5.6	ne.	5	0.18
25	30.22	30.14	30.21	70	75	71	67	76	61	60	5.4	ne.	5	0.15
26	30.19	30.15	30.23	71	73	71	70	76	66	74	6.0	ne.	5	0.01
27	30.20	30.14	30.16	69	75	71	68	75	73	75	6.0	ne.	5	0.12
28	30.12	30.05	30.16	71	77	70	70	78	68	69	6.3	ne.	3, 0	0.05
29	30.14	30.10	30.16	68	73	72	66	81	77	84	7.1	ne., sw.	2, 0	0.00
30	30.14	30.05	30.14	70	79	72	68	81	77	79	7.1	sw.	1	0.02

Dark, overcast weather, but little rain at the end of April and the beginning of May. Hail at Hawaii 24th of April.

The barometer is corrected for temperature and reduced to sea level, but the gravity correction, —0.06, is still to be applied.

The absolute humidity is expressed in grains of water, per cubic foot, and is the average of four observations.

The rain is measured at 6 p. m., daily.

OBSERVATIONS IN ALASKA.

Mr. H. S. Tibbey, observer at Coal Harbor, Unga Island, Alaska, N. 55° 20′ 45″, W. 164° 38′ 39″, altitude 30 feet, sends the following notes with regard to special phenomena. The hours quoted by him are evidently local time, civil reckoning:

January 16, 7.10 a. m., slight shock of earthquake, vibrations northeast to southwest.

January 17, 3.45 a. m., slight shock of earthquake, vibrations northeast to southwest.

January 30, high wind commenced southerly early in the morning, rate 17 miles per hour, increased to 28 and reached 72 miles from 4 to 6 p. m. Hauled to southwest, blowing 33 miles till 2 p. m., next day, when it gradually abated to a gentle breeze.

February 8, 4 p. m., wind from northwest, increased to 37 miles per hour. Barometer having risen rapidly to 30.50, began falling rapidly. Wind culminated between 8 and 9 a. m. on the 9th, blowing 60 miles per hour; then shifted to north-northeast and northeast, gradually decreasing to 35 and 23 miles; hauled to the northwest and became normal. Barometer stopped falling at 29.44, at 2 p. m., 9th. During the disturbance, as soon as the wind left the northwest, the thermometer jumped from 6° to 29°, and continued fluctuating until the wind settled back again to the northwest.

March 17, during the daytime it was almost calm; at about 9 p. m. the wind shifted from southwest to southeast, freshened rapidly, increasing during the night from 15 miles per hour until noon of the 18th, when it culminated at 90 miles per hour, accompanied by light showers, fine snow, and occasional hail. By 4 p. m., wind velocity declined to 40 miles per hour; hauling, meanwhile, to southwest and blowing in squalls, with fine snow; averaged 20 miles per hour till 8 a. m., of the 19th, when it passed more to the westerly and became normal. The barometer fell from 30.07, at 2 p. m., 17th, to 29.40 at 7 a. m., 18th, when it commenced to rise and reached 29.98 at 7 a. m., 19th. Thermometer fluctuated from 35° to 12° during the storm.

RAINFALL IN TEXAS.

Rainfall observed near Golinda, Falls Co., Tex., by Mr. E. G. Hanrick.

(Approximate location, N. 31° 20′, W. 97°; altitude, 500 feet.)

Month.	1881.	1882.	1883.	1884.	1885.	1886.	1887.	1888.	1889.	1890.	1891.	1892.	1893.
	Ins.	*Ins.*	*Ins.*	*Ins.*	*Ins.*	*Ins.*	*Ins.*	*Ins.*	*Ins.*	*Ins.*	*Ins.*	*Ins.*	*Ins.*
January	0.50	11.00	1.75	1.25	6.20	1.75	0.00	2.90	6.75	2.75	6.90	1.90	1.00
February	3.75	7.10	3.50	2.75	0.70	3.50	0.00	5.25	5.20	2.50	1.15	1.50	0.65
March	1.25	4.10	5.25	1.10	2.40	1.50	0.00	4.70	0.60	5.15	1.00	2.55	3.40
April	3.25	1.00	0.25	8.85	5.50	5.10	1.90	3.95	2.10	7.55	7.00	1.50	3.00
May	3.00	6.00	0.25	9.50	12.25	0.10	3.60	4.10	3.20	5.50	0.30	4.65	4.50
June	0.00	0.00	2.75	0.35	2.00	2.00	1.05	3.95	8.25	3.10	2.10	1.05	0.40
July	1.50	6.50	2.60	1.35	1.50	2.75	1.20	2.00	0.80	1.85	1.35	0.90	1.00
August	3.50	4.00	0.00	0.00	0.10	0.55	2.35	5.75	1.10	1.60	3.50	4.60	3.15
September	4.50	5.50	1.00	0.75	5.95	6.50	2.50	1.00	5.80	5.20	0.80	0.20	0.50
October	9.75	5.50	0.50	3.75	1.50	1.00	1.80	2.25	0.40	5.10	0.60	3.20	0.00
November	2.75	6.50	1.35	1.90	1.50	1.20	3.00	5.85	4.95	2.90	2.50	1.80	3.95
December	2.25	0.00	2.50	3.50	2.25	0.00	2.65	4.30	0.00	0.25	5.15	5.20	0.60
Total	36.00	57.20	21.70	35.05	41.85	25.95	20.05	46.00	39.15	43.45	32.35	29.05	22.15

General average of 13 years, 34.61 inches annually.

THE WEIGHT OF SNOW.

In connection with the heavy snowfall of April 10 and 14, in Pennsylvania, a correspondent records the fact that at Nittany, in central Pennsylvania, N. 41°, W. 77° 40′, the amount of snow that fell on the platform scales at that place weighed 1,640 pounds; as the platform was 8 by 12 feet, or 96 square feet in area, this gives an average weight of about 17 pounds to a square foot, which is equivalent to a depth of 3.3 inches of water, and using the ordinary ratio, 10, this gives a corresponding depth of 33 inches of snow.

Mr. Edward Ferry, of Bel Air, Harford Co., Md., in a letter published in the monthly report of the Maryland State Weather Service, states that his clerk found that the weight of the snow on the platform scales at that place was 1,520 pounds (presumably on the morning of the 12th of April); the scale platform measured 7 feet 10 inches by 15 feet; this gives an average of 12.93 pounds to the square foot, and, if we assume that none of the snow melted, and so escaped being weighed, this would correspond to a depth of 2.4 inches of water. The average depth of snow lying on the ground at the end of the great snowstorm of April 10 and 11, in northern Maryland, varied from 15 to 30 inches in the different localities covered by newspaper reports, but the largest recorded by regular observers was 24 inches at Darlington and at Fallston, both in Harford County, at the head of Chesapeake Bay.

Although the above result may be rather crude, yet it suggests an excellent method of getting at the average quantity of precipitation in case the snow falls without melting and without much drifting. It also gives some idea of the weight that must be supported by roofs and walls in cases of similar heavy snowfalls.

THE BEAUFORT WIND SCALE AS USED AT SEA.

One of the best series of observations for the purpose of converting the 0 to 12 scale of Admiral Beaufort into wind velocities, as measured by anemometers, is that made in the years 1874–'76, on H. M. S. *Gazelle*, of the German Navy, under the command of Capt. von Schleinitz. During these years there were opportunities for measuring velocities as high as 11 of the Beaufort scale; 3,386 observations were recorded. The anemometer was a so-called portable instrument made by Krafft; the diameter of the circle described by the cups was 29 centimeters, and it has been assumed that the Robinson anemometer factor, 3, holds good for this instrument. The estimated wind force, as recorded by the officers of the *Gazelle*, seems to accord very closely with the estimates by experienced observers on the German coast. The highest winds recorded in connection with the hurricane at Mauritius, April 29, 1892, and at Manila, October 20, 1882, were 50 and 54 meters per second, respectively, by large Robinson anemometers, for which the factor 3 is assumed, and, therefore, 50 is adopted as appropriate to the figure 12 on the Beaufort scale. The German naval ship *Elizabeth*, during 1877, in the northwest part of the Pacific Ocean, experienced four severe storms, and the results of 131 measurements give another set of conversions from the Beaufort to the absolute scale. The results of the observations on both the *Elizabeth* and the *Gazelle* are given in the following table:

Beaufort scale.	Meters per second.		Miles per hour.	
	Gazelle.	Elizabeth.	Gazelle.	Elizabeth.
0	0.0	0.0	0.0	0.0
1	1.0	1.5	2.2	3.4
2	2.0	3.0	4.5	6.7
3	4.0	4.5	8.9	10.1
4	6.0	7.0	13.4	15.7
5	8.0	8.5	17.9	19.0
6	10.5	10.5	23.5	23.5
7	13.0	13.5	29.1	30.2
8	16.0	16.5	35.8	36.9
9	20.0	20.0	44.7	44.7
10	25.0	25.0	55.9	55.9
11	32.5	.....	72.7	.....
12	(50.0)	.....	(111.8)	.....

METEOROLOGICAL TABLES.

[Prepared by the Division of Records and Meteorological Data.]

The following pages present in tabular form the climatological data for the current month, on which the text of the preceding part of this REVIEW has, to a large extent, been based.

For a detailed description of the methods of observation, compilation, and computation relating to these tables, the reader is referred to page 129 of the MONTHLY WEATHER REVIEW for March, 1894. The general contents of the tables are as follows:

Table I gives for 140 Weather Bureau stations, making two observations daily, and for 10 others making only one observation, the ordinary climatological data.

Table II gives for about 2,200 stations, occupied by voluntary observers, the mean and extreme temperatures and the total precipitation.

Table III gives for about 30 Canadian stations the climatological data.

Table IV gives for 36 Weather Bureau stations the percentages of sunshine for each hour of local mean time.

Table V gives for 79 stations the mean temperatures for each hour of seventy-fifth meridian time.

Table VI gives for 68 stations the mean pressures for each hour of seventy-fifth meridian time.

Table VII gives for 142 stations the mean hourly movement of the wind.

Table VIII gives for 68 stations the resultant movements and directions of the wind from continuous registrations.

Table IX gives for 140 stations the component and resultant directions based on simultaneous observations at 8 a. m. and 8 p. m., seventy-fifth meridian time.

TABLE I.—*Climatological data for Weather Bureau Stations, April*, 1894.

Districts and stations.	Elevation above sea-level, feet.	Length of record, years.	Pressure, in inches.			Temperature of the air, in degrees Fahrenheit.								Humidity and precipitation.					Wind.					Clear days.	Partly cloudy days.	Cloudy days.	Average cloudiness, tenths.	Mean temperature data since opening of station.			
			Mean pressure, 8 a. m. and 8 p. m. + 2.	Mean reduced.	Departure from normal.	Mean max. and min. + 2.	Departure from normal.	Maximum.	Date.	Mean minimum.	Minimum.	Date.	Greatest daily range.	Mean temperature of the dew-point.	Mean relative humidity, per cent.	Precipitation, in inches.	Departure from normal.	Days with .01, or more.	Total movement, miles.	Prevailing direction.	Maximum velocity. Miles per hour.	Maximum velocity. Direction.	Maximum velocity. Date.					Highest for month.	Year.	Lowest for month.	Year.
New England.						44.0	+ 0.6									2.90	— 0.4														
Eastport	76	22	29.92	30.01	+ .12	39.0	+ 0.4	63	27	45	15	3	33	22	30	73	2.11	— 1.3	12	9,791	ne.	51	ne.	8	4	14	12	6.7	42.0	1892	33.8	1874
Portland	103	23	29.89	30.00	+ .08	43.2	+ 1.6	75	28	51	19	3	36	27	33	70	2.55	— 0.4	12	6,826	n.	31	e.	11	11	3	10	6.1	48.8	1878	36.4	1874
Northfield	872	8	29.09	30.04	+ .08	43.0	+ 4.3	74	20	54	15	3	32	45	34	72	1.32	— 1.0	10	7,483	n.	36	n.	9	11	6	13	5.7	43.4	1889	35.0	1888
Boston	125	24	29.89	30.03	+ .10	47.0	+ 1.9	79	27	54	23	3	40	32	35	67	3.78	+ 0.2	11	9,808	sw.	48	ne.	11	10	8	12	5.8	48.4	1892	37.0	1874
Nantucket	14	8	30.01	30.02	+ .08	42.3	+ 0.1	59	28	47	22	3	37	18	37	82	2.24	— 0.6	13	11,419	ne.	60	se.	11	10	9	11	6.0	46.2	1892	41.7	1893
Woods Holl	.....	17	.....	.....	.....	43.2	— 1.1	58	1	49	25	3	38	17	.....	.....	3.97	— 0.3	12	12,672	sw.	54	sw.	4	10	7	13	6.1	48.7	1878	38.2	1874
Vineyard Haven	.....	8	.....	.....	.....	46.2	— 0.4	69	28	53	25	3	39	25	.....	.....	4.70	+ 2.2	13	.....	sw.	....	.....	...	12	3	15	....	48.0	1892	44.5	1888
Block Island	27	14	30.00	30.03	+ .08	43.5	— 0.3	63	28	48	25	3	39	16	38	82	3.89	+ 0.8	11	13,782	sw.	72	e.	11	8	11	11	6.0	45.2	1886	41.1	1888
Narragansett Pier	.....	13	.....	.....	.....	44.1	— 0.1	70	28	51	12	12	37	26	.....	.....	2.47	— 0.8	10	.....	sw.	....	.....	...	11	3	16	....	48.4	1886	42.5	*
New Haven	107	22	29.90	30.02	+ .05	47.3	+ 1.5	75	28	55	23	3	39	31	39	78	2.24	— 1.5	10	7,811	s.	37	ne.	13	12	9	9	5.2	52.4	1878	40.0	1874
New London	45	24	30.00	30.05	+ .08	45.2	— 0.9	68	28	52	22	3	38	25	36	74	2.62	— 1.2	13	6,635	nw.	31	e.	11	10	6	14	6.0	50.2	1878	39.9	1874
Mid. Atlantic States.						52.1	+ 0.4									2.43	— 1.0														
Albany	85	21	29.96	30.05	+ .09	48.4	+ 1.7	76	27	57	22	3	40	33	36	65	2.02	— 0.6	13	6,719	n.	34	se.	4	10	8	12	5.9	51.5	1878	36.6	1874
New York, N. Y	185	24	29.84	30.04	+ .06	49.6	+ 0.9	76	27	58	25	3	41	27	39	73	2.51	— 0.9	10	8,115	nw.	48	ne.	11	10	11	9	5.3	53.6	1871	41.3	1874
Harrisburg	377	6	29.65	30.07	.....	49.8	.....	76	27	58	27	3	41	31	39	69	2.27	.....	11	5,836	n.	30	w.	5	12	5	13	5.3	52.8	1891	48.5	1892
Philadelphia	117	24	29.92	30.05	+ .06	51.5	+ 0.9	77	28	60	27	3	43	28	38	66	2.99	+ 0.1	10	8,745	nw.	43	ne.	11	13	7	10	5.0	57.1	1871	42.6	1874
Atlantic City	53	21	30.00	30.04	+ .07	47.6	+ 0.5	68	28	54	26	3	42	22	41	82	1.71	— 1.6	10	9,526	sw.	49	e.	11	12	8	10	5.3	52.3	1878	42.4	1875
New Brunswick	.....	...	.....	.....	.....	49.1	.....	76	27	59	20	3	39	36	.....	.....	2.87	.....	12	.....	e.	....	.....	...	4	16	10	....	....	....	.....	....
Baltimore	179	24	29.85	30.05	+ .05	52.4	— 0.7	79	28	60	30	3	44	29	37	60	3.80	+ 0.5	12	6,351	nw.	38	w.	5	11	11	8	4.6	58.8	1871	46.9	1874
Washington, D. C	112	24	29.95	30.07	+ .06	53.2	+ 0.4	83	28	62	30	3	44	33	39	63	3.34	+ 0.2	10	6,263	nw.	34	nw.	5	15	7	8	4.4	58.3	1878	47.6	1874
Cape Henry	.....	21	.....	.....	.....	54.4	+ 0.6	79	27	62	36	13	47	28	.....	.....	1.76	— 2.7	7	.....	nw.	.....	.....	...	14	8	8	....	59.2	1893	51.1	1875
Lynchburg	685	23	29.35	30.00	+ .09	55.6	— 0.2	83	*	66	27	3	45	37	41	61	1.64	— 1.6	11	3,951	nw.	26	nw.	28	20	13	7	5.1	61.5	1878	50.6	1874
Norfolk	57	24	30.01	30.06	+ .08	55.8	— 0.3	86	28	64	37	11	47	28	48	80	2.11	— 2.0	10	7,264	nw.	36	nw.	28	16	9	5	3.6	62.5	1871	52.3	*
S. Atlantic States.						61.7	+ 0.1									1.26	— 2.4														
Charlotte	773	16	29.25	30.07	+ .06	59.6	— 0.2	86	17	70	35	12	49	30	41	56	2.43	— 1.3	8	5,800	sw.	30	sw.	7	19	7	4	3.6	63.2	1888	55.7	1881
Hatteras	11	14	30.09	30.10	+ .10	57.8	+ 0.5	72	28	63	40	12	52	22	50	75	1.32	— 3.8	11	10,628	sw.	40	nw.	23	8	18	4	5.1	59.4	1891	52.8	1881
Kittyhawk	9	20	30.06	30.07	+ .08	54.4	— 0.4	80	28	61	37	12	48	23	47	76	1.17	— 3.8	6	11,095	ne.	46	se.	10	14	8	8	4.5	60.8	1890	50.9	1875
Raleigh	388	8	29.67	30.09	+ .08	58.4	+ 0.9	86	28	69	34	3	48	32	44	63	1.74	— 0.8	8	5,357	nw.	26	nw.	5	13	7	10	4.8	62.2	1893	57.2	*
Southport	34	19	30.07	30.10	+ .08	60.0	— 0.1	75	29	67	36	13	53	28	52	76	0.84	— 2.1	6	8,362	sw.	35	w.	10	15	11	4	3.7	63.7	*	56.4	1881
Wilmington	78	24	30.02	30.10	+ .09	61.0	— 0.3	84	29	70	41	13	52	28	51	76	0.78	— 2.4	8	7,387	sw.	32	s.	10	16	7	7	3.6	65.8	1893	57.6	1881
Charleston	52	24	30.06	30.11	+ .08	64.7	+ 0.5	86	29	72	44	13	58	22	55	77	0.53	— 3.5	5	6,758	sw.	31	ne.	30	11	18	1	4.0	68.2	1893	60.4	1881
Columbia	.....	7	.....	.....	.....	63.6	+ 0.6	93	29	75	38	12	52	31	.....	.....	1.37	— 1.6	6	.....	w.	....	.....	...	13	12	5	....	69.4	1893	61.4	1891
Augusta	209	23	29.89	30.12	+ .09	64.0	— 0.3	90	29	75	40	13	53	34	47	60	2.17	— 1.6	9	4,831	se.	33	w.	11	19	6	5	3.1	68.9	1893	60.6	1875
Savannah	98	24	30.00	30.11	+ .06	66.3	+ 0.2	87	29	76	44	13	57	26	54	73	0.64	— 3.2	6	6,517	s.	29	sw.	10	9	16	5	4.3	70.0	1893	62.5	1875
Jacksonville	43	23	30.06	30.11	+ .07	68.6	— 0.2	85	9	78	48	13	59	28	55	69	0.83	— 2.3	4	5,684	se.	27	sw.	21	10	16	4	4.5	72.6	1893	66.5	*
Florida Peninsula.						72.8	— 0.8									0.31	— 1.8														
Jupiter	28	7	30.06	30.09	.....	71.9	— 1.9	84	21	79	55	12	65	29	64	78	0.74	— 1.9	3	7,051	se.	27	ne.	6	19	10	1	3.7	74.0	1893	70.6	1880
Key West	22	24	30.08	30.10	+ .06	76.6	+ 0.6	85	27	81	68	1	72	11	64	69	0.03	— 1.3	1	5,850	e.	33	ne.	6	22	6	2	2.7	79.2	1883	73.2	1891
Tampa	36	....	30.06	30.10	.....	71.8	.....	89	18	82	54	7	62	27	61	76	1.36	.....	4	4,762	ne.	20	ne.	6	10	14	1	4.5	....	.....	.....	.....
Titusville	44	7	30.07	30.11	.....	69.8	— 1.2	87	21	79	50	13	61	26	60	73	0.17	— 2.3	4	8,874	e.	48	n.	6	19	11	0	2.4	71.9	1893	67.3	1891
Eastern Gulf States.						67.4	+ 1.0									3.26	— 1.7														
Atlanta	1,131	16	28.90	30.03	+ .05	62.0	+ 0.4	88	29	72	35	12	52	29	44	58	3.06	— 0.6	9	7,800	nw.	45	w.	19	13	8	9	4.4	64.3	1882	58.1	1884
Pensacola	56	15	30.01	30.07	+ .03	69.2	+ 1.4	83	23	76	52	11	63	21	59	74	1.73	— 2.1	6	7,134	sw.	34	nw.	19	14	10	6	4.2	70.4	1882	64.4	1881
Mobile	57	24	30.02	30.08	+ .05	68.7	+ 1.1	83	21	76	51	6	61	29	60	79	1.98	— 3.2	10	6,156	s.	30	s.	19	5	14	11	6.0	70.5	1882	63.1	1875
Montgomery	257	22	29.80	30.08	+ .04	66.8	+ 0.9	90	17	78	43	3	56	32	51	64	3.49	— 1.8	8	4,511	n.	32	sw.	19	11	14	5	4.5	69.0	1893	62.1	1875
Meridian	358	....	29.68	30.06	.....	65.5	.....	89	16	77	40	7	54	36	55	75	6.29	.....	9	4,429	ne.	30	sw.	17	11	11	8	5.1	....	.....	.....	.....
Vicksburg	254	23	29.77	30.03	+ .02	67.2	+ 0.6	86	16	76	48	10	58	28	53	66	4.62	— 1.8	9	5,623	se.	39	nw.	9	16	9	5	3.5	69.6	1893	60.3	1874
New Orleans	54	24	30.00	30.06	+ .05	70.8	+ 1.3	85	16	79	55	6	63	23	60	75	4.71	— 0.7	7	5,935	se.	30	ne.	24	13	12	5	4.5	72.5	1882	65.0	1875
Port Eads	.....	.....	.....	.....	.....	69.3	.....	79	*	75	58	11	64	15	.....	.....	3.99	.....	6	.....	se.	....	.....	...	6	19	5	....	....	....	.....	....
Western Gulf States.						68.8	+ 1.7									4.63	+ 0.6														
Shreveport	249	23	29.74	30.00	+ .02	68.4	+ 0.8	88	15	78	48	10	59	31	56	70	4.03	— 1.5	13	5,764	se.	44	w.	24	10	9	11	5.1	69.8	1880	60.8	1874
Fort Smith	492	12	29.49	30.00	+ .05	62.6	+ 0.3	90	16	74	39	10	51	41	48	63	6.50	+ 1.0	10	5,826	e.	48	e.	24	16	6	8	4.2	65.7	1889	57.6	1884
Little Rock	302	15	29.70	30.02	+ .03	63.2	+ 0.4	89	16	73	42	10	54	30	49	65	4.19	— 0.7	12	5,669	s.	36	sw.	17	15	6	9	4.8	66.2	1888	59.8	1884
Corpus Christi	20	8	29.94	29.96	— .02	73.0	+ 2.9	83	24	77	58	10	69	14	70	91	5.10	+ 3.5	7	11,510	se.	46	ne.	6	2	11	17	7.2	73.8	1893	68.2	1891
Galveston	42	23	29.99	30.03	+ .04	71.8	+ 2.0	80	20	76	58	10	68	14	66	88	1.42	— 1.6	6	8,573	se.	33	se.	30	8	20	2	4.2	72.5	1882	65.5	1875
Palestine	511	13	29.46	30.00	+ .01	70.2	+ 3.7	89	15	81	43	10	60	34	56	68	6.47	+ 2.2	12	5,492	se.	38	s.	17	6	15	9	5.8	70.2	*	62.1	1884
San Antonio†	679	17	29.27	29.98	+ .01	74.1	+ 4.6	99	24	85	48	10	63	40	55	57	2.68	— 0.2	9	5,988	se.	36	se.	13	7	15	8	5.4	74.3	1893	65.9	1886
Ohio Val. & Tenn.						56.4	+ 0.6									3.52	— 0.8														
Chattanooga	762	16	29.28	30.09	+ .07	61.6	+ 0.8	88	29	73	37	3	59	35	44	57	2.00	— 2.6	12	5,593	sw.	41	w.	11	9	16	5	4.8	63.8	1893	57.1	1884
Knoxville	980	24	29.03	30.08	+ .06	58.4	— 0.2	86	17	69	34	13	48	34	43	61	2.81	— 2.3	12	4,054	ne.	30	w.	19	13	7	10	4.9	62.5	1893	52.7	1875
Memphis	330	24	29.70	30.06	+ .07	63.2	+ 0.9	89	29	73	41	12	54	28	49	65	8.45	+ 2.9	9	5,798	se.	34	sw.	18	15	8	7	3.4	65.5	1888	55.7	1874
Nashville	553	24	29.46	30.05	+ .07	59.8	+ 0.2	90	29	70	36	12	50	32	47	66	4.05	— 0.9	9	4,267	se.	26	nw.	10	12	13	5	4.8	64.5	1871	54.3	1874
Lexington	989	11	28.98	30.05	.....	54.0	+ 0.7	83	30	63	32	3	45	31	41	67	4.19	+ 0.9	15	9,020	sw.	62	sw.	10	9	8	13	6.0	57.4	1891	46.9	1874
Louisville	525	23	29.48	30.06	+ .06	56.4	— 0.5	91	30	66	35	6	47	35	42	63	3.97	— 0.4	12	6,008	sw.	38	sw.	4	10	9	11	5.6	60.9	1878	49.2	1874
Indianapolis	766	24	29.21	30.04	+ .05	54.0	+ 1.9	86	28	64	31	2	44	29	40	63	2.72	— 0.8	13	5,043	nw.	28	sw.	4	12	7	11	5.2	58.6	1878	45.8	1874
Cincinnati	628	24	29.38	30.06	+ .06	54.2	+ 0.5	84	28	63	33	2	46	29	40	61	1.60	— 1.5	11	5,639	sw.	33	w.	4	15	5	10	5.0	60.2	1878	47.9	1874
Columbus	868	16	29.13	30.07	+ .08	51.5	+ 0.8	83	28	61	29	9	42	30	40	69	1.79	— 1.2	12	7,523	nw.	52	w.	4	10	9	11	5.8	54.4	1886	46.8	1881
Pittsburg	820	24	29.18	30.07	+ .07	50.9	0.0	82	18	61	24	9	41	34	40	68	3.63	+ 0.9	12	4,928	nw.	30	nw.	7	12	7	11	5.3	56.6	1878	41.8	1874
Parkersburg	638	6	29.38	30.07	.....	52.5	.....	84	18	62	26	3	42	38	40	65	3.47	.....	17	4,366	w.	24	sw.	18	7	11	12	6.0	54.7	1893	51.4	1892
Lower Lake Region.						46.6	+ 2.4									2.12	— 0.6														
Buffalo	690	24	29.31	30.07	+ .09	45.1	+ 3.8	76	18	53	23	3	38	29	34	68	3.69	— 1.2	12	6,424	sw.	40	w.	20	12	10	8	5.3	50.0	1878	34.5	1874
Oswego	335	24	29.68	30.05	+ .06	44.3	+ 2.3	73	18	51	22	2	37	33	33	67	1.94	— 0.2	12	7,179	w.	35	se.	10	9	6	15	5.6	52.4	1878	36.8	1874
Rochester	523	24	29.52	30.09	+ .10	46.6	+ 3.4	79	30	56	22	3	38	39	36	68	2.03	— 0.5	14	5,278	sw.	32	sw.	4	11	10	9	4.9	52.5	1878	35.5	1874
Erie	714	21	29.27	30.05	+ .07	45.2	+ 1.3	77	19	52	24	3	38	30	36	71	1.74	— 0.9	12	7,276	ne.	60	se.	10	8	16	6	5.3	53.6	1878	37.3	1874
Cleveland	740	24	29.25	30.06	+ .06	47.2	+ 2.3	80	18	55	25	3	40	38	37	69	1.55	— 0.8	11	7,847	ne.	46	sw.	4	12	9	9	5.3	53.0	1878	39.6	1874
Sandusky	629	16	29.37	30.06	+ .06	48.2	+ 2.3	81	30	55	27	3	41	33	38	71	1.67	— 0.7	11	5,931	e.	32	w.	4	3	14	13	6.6	54.3	1878	42.6	1881
Toledo	674	24	29.30	30.03	+ .05	48.8	+ 2.1	82	28	57	27	2	40	34	38	69	1.81	— 0.4	14	7,505	e.	43	sw.	4	10	8	12	5.7	56.0	1878	40.5	1874
Detroit	724	24	29.25	30.04	+ .05	47.6	+ 1.6	78	30	56	24	2	39	33	38	73	2.54	+ 0.3	9	7,362	ne.	48	sw.	4	13	5	12	5.5	53.4	1878	37.1	1874
Upper Lake Region.						45.4	+ 3.1									2.69	+ 0.3														
Alpena	609	22	29.38	30.06	+ .06	41.0	+ 4.0	62	30	48	18	2	34	26	36	83	2.06	— 0.1	10	7,450	se.	47	e.	10	10	10	10	5.4	45.6	1878	29.5	1874
Escanaba	.....	23	.....	.....	.....	41.4	+ 5.5	68	28	50	14	2	33	28	.....	.....	1.44	— 0.6	5	.....	se.	.....	.....	...	9	17	4	....	44.2	1878	29.2	1874
Grand Haven	628	23	29.32	30.01	+ .03	46.2	+ 2.5	83	30	54	23	2	38	30	38	78	2.57	+ 0.1	11	7,510	e.	34	se.	3	5	10	15	6.6	51.6	1878	36.1	1874
Marquette	734	23	29.21	30.02	+ .02	41.0	+ 4.0	82	30	48	17	2	34	35	34	79	1.73	— 0.3	12	7,108	ne.	45	s.	30	4	15	11	6.4	45.1	1878	30.2	1874
Port Huron	639	20	29.35	30.06	+ .07	44.1	+ 3.4	76	30	52	22	2	36	35	35	73	2.28	+ 0.2	9	8,000	ne.	54	sw.	4	12	7	11	5.1	50.0	1878	37.0	1881
Sault Ste. Marie	642	6	29.33	30.04	.....	41.6	.....	71	27	51	12	2	32	35	31	72	1.10	.....	11	6,427	se.	48	se.	10	4	7	19	6.8	41.6	1894	33.0	1893
Chicago	824	24	29.12	30.02	+ .04	46.8	+ 1.0	84	30	54	31	9	40	34	37	72	2.65	— 0.6	12	9,739	ne.	52	sw.	30	13	9	8	4.9	52.2	1878	38.6	1874
Milwaukee	673	24	29.28	30.02	+ .03	45.4	+ 2.2	70	30	52	30	2	39	25	38	80	2.89	+ 0.1	14	7,143	ne.	39	ne.	8	6	11	13	6.3	49.6	1878	35.9	1874
Green Bay	617	8	29.34	30.02	+ .03	46.4	+ 4.5	79	30	54	23	2	38	35	36	69	2.75	+ 0.7	13	6,479	ne.	40	sw.	3	2	11	17	7.4	46.4	1894	39.4	1888
Duluth	656	24	29.26	30.00	.00	37.8	+ 0.1	70	30	43	23	1	33	30	33	85	5.85	+ 3.5	15	4,872	ne.	27	ne.	8	6	7	17	6.9	44.6	1878	32.6	1874
North Dakota.						45.4	+ 2.8									3.22	+ 1.6														
Moorhead	935	14	28.91	29.94	— .04	43.0	+ 3.1	77	29	50	20	1	36	32	37	81	2.99	+ 1.0	17	8,708	n.	40	se.	2	1	12	17	7.7	46.9	1891	32.5	1893
Saint Vincent	804	14	29.10	29.98	— .04	41.5	+ 3.9	77	29	51	14	1	32	34	36	88	4.42	+ 3.1	15	7,308	n.	35	n.	19	3	11	16	7.7	44.1	1891	27.8	1893
Bismarck	1,698	20	28.12	29.95	— .02	43.6	+ 1.4	74	28	52	23	9	35	37	35	74	3.40	+ 1.2	14	10,245	se.	50	nw.	3	12	7	11	5.4	48.9	1889	33.7	1875
Williston	1,874	16	27.91	29.91	— .06	45.6	+ 2.7	71	29	56	25	12	35	33	32	62	2.07	+ 0.9	10	9,250	se.	48	nw.	3	4	10	16	6.8	48.7	1889	35.5	1880
Upper Miss. Valley.						53.6	+ 2.5									2.75	— 0.1														
Minneapolis	.....	.....	.....	.....	.....	49.4	.....	77	29	58	23	10	41	27	.....	.....	4.61	.....	15	.....	ne.	.....	.....	...	6	7	17	.....	.....	.....	.....	.....
Saint Paul	850	24	29.03	29.95	— .02	48.7	+ 2.8	77	29	56	26	1	41	27	38	69	4.30	+ 1.9	15	5,738	se.	36	sw.	3	6	6	18	7.2	50.9	1878	36.9	1874
La Crosse	720	22	29.19	29.97	+ .01	50.7	+ 3.6	77	29	59	26	2	42	28	39	68	3.74	+ 1.7	14	6,351	s.	34	w.	3	5	15	10	6.3	53.9	1878	40.2	1874

TABLE I.—*Climatological data for Weather Bureau Stations, April, 1894*—Continued.

Districts and stations.	Elevation above sea-level, feet.	Length of record, years.	Pressure, in inches.			Temperature of the air, in degrees Fahrenheit.								Humidity and precipitation.				Wind.				Clear days.	Partly cloudy days.	Cloudy days.	Average cloudiness, tenths.	Mean temperature data since opening of station.				
			Mean pressure, 8 a. m. and 8 p. m. + 2.	Mean reduced.	Departure from normal.	Mean max. and min. + 2.	Departure from normal.	Maximum.	Date.	Mean minimum.	Minimum.	Date.	Mean minimum.	Greatest daily range.	Mean temperature of the dew-point.	Mean relative humidity, per cent.	Precipitation, in inches.	Departure from normal.	Days with .01, or more.	Total movement, miles.	Prevailing direction.	Maximum velocity. Miles per hour.	Maximum velocity. Direction.	Maximum velocity. Date				Highest for month.	Year.	Lowest for month.	Year.
Up. Miss. Val.—Con.																													
Davenport	613	23	29.31	29.98	.00	53.0	+ 3.6	87	28	62	30	1	44	27	41	68	1.37	— 1.4	7	8,114	e.	48	s.	17	3	14	13	6.7	54.7	1878	41.2	1874
Des Moines	869	16	29.02	29.96	.00	53.0	+ 2.6	87	28	62	28	1	44	33	39	64	1.70	— 0.9	12	7,476	se.	37	w.	3	8	17	5	5.4	53.0	1894	43.4	1881
Dubuque	651	21	29.27	29.97	.00	51.8	+ 3.4	84	28	61	28	2	43	28	42	74	2.27	— 0.6	14	4,806	se.	28	w.	3	4	12	14	6.7	53.6	1878	41.3	1874
Keokuk	613	23	29.32	29.98	+ .02	53.8	+ 1.7	88	29	63	29	2	44	33	41	65	2.75	— 0.1	10	7,004	e.	42	nw.	4	10	9	11	5.4	57.5	1878	44.0	1874
Cairo	359	23	29.04	30.02	+ .05	59.4	+ 0.8	87	29	68	38	10	50	31	48	69	2.54	— 1.4	9	6,692	s.	48	sw.	18	12	10	8	4.5	64.1	1878	52.0	1874
Springfield, Ill	644	15	29.31	30.01	+ .02	54.0	+ 0.9	86	29	64	32	12	44	31	41	67	3.36	+ 0.3	9	7,911	s.	40	sw.	18	6	12	12	6.3	56.1	1886	47.9	1881
Hannibal	534	....	29.41	29.99	.....	55.0	.....	87	29	65	32	6	45	39	42	66	1.74	.....	10	8,070	e.	38	w.	4	8	10	12	5.9	....	....	.....	....
Saint Louis	571	24	29.39	30.01	+ .04	57.8	+ 1.1	88	29	66	34	11	49	29	43	64	2.68	— 0.6	10	7,873	se.	49	sw.	4	14	5	11	4.6	61.3	1878	47.6	1874
Missouri Valley.						54.2	+ 2.3										2.79	— 0.1													
Columbia	.....	....	.....	.....	.....	57.1	.....	90	29	69	30	11	45	41	.....	.....	2.02	.....	11	6,589	se.	30	nw.	10	10	7	13	5.8	....	....	.....	....
Kansas City	963	6	28.94	29.97	+ .01	57.3	+ 2.6	87	28	67	34	11	47	36	42	63	2.51	— 0.7	13	7,153	se.	34	sw.	6	10	16	4	4.6	57.3	1894	52.5	1892
Springfield, Mo	1,356	9	28.55	29.98	.00	57.8	+ 0.7	87	28	68	34	22	48	32	41	60	4.16	0.0	10	8,234	se.	38	nw.	19	12	8	10	4.7	59.0	1888	54.8	1892
Topeka	.....	7	.....	.....	.....	58.5	+ 3.2	87	28	71	32	5	46	39	.....	.....	2.94	+ 0.6	12	.....	se.	.....	.....	...	9	16	5	.....	58.5	1894	52.5	1892
Omaha	1,123	23	28.76	29.96	— .02	54.0	+ 2.6	89	28	64	29	5	44	32	39	65	2.31	— 0.8	12	6,988	se.	32	e.	8	10	9	11	5.3	55.2	1890	44.4	1881
Valentine	2,613	9	27.18	29.93	— .08	49.2	+ 2.5	88	28	62	19	5	36	43	33	62	2.60	— 0.2	13	10,920	n.	52	nw.	19	4	17	9	6.4	51.8	1889	42.0	1893
Sioux City	1,165	....	28.67	29.92	.....	51.6	.....	87	28	62	24	1	42	35	38	66	2.79	.....	13	9,878	se.	46	se.	8	9	9	12	5.8	....	....	.....	....
Pierre	1,470	....	28.33	29.90	.....	50.0	.....	83	28	61	24	1	39	38	38	68	1.86	.....	12	10,310	se.	48	nw.	3	8	12	10	5.7	....	....	.....	....
Huron	1,310	13	28.51	29.92	— .06	48.2	+ 2.4	85	28	60	22	10	36	42	37	73	2.84	+ 0.4	13	11,989	se.	64	nw.	3	5	10	15	6.4	48.2	1894	40.4	1893
Northern Slope.						47.3	+ 1.6										2.00	+ 0.6													
Havre	2,477	14	27.27	29.89	— .08	46.3	+ 1.9	78	21	58	20	12	34	45	29	58	2.23	+ 1.4	10	7,629	sw.	44	nw.	2	6	18	6	5.7	50.4	1889	36.8	1893
Miles City ‡	2,374	17	27.39	29.89	.....	48.6	+ 2.0	76	21	59	27	18	38	38	33	61	1.44	+ 0.3	11	6,194	se.	39	nw.	2	5	16	9	5.8	54.3	1879	40.0	1884
Helena	4,118	15	25.80	30.03	+ .03	45.2	+ 0.3	72	21	54	20	17	36	34	25	50	0.82	— 0.3	10	7,087	s.	42	sw.	26	7	16	7	5.1	49.2	1889	36.8	1880
Rapid City	3,280	9	26.54	29.93	— .08	48.4	+ 3.0	77	23	60	22	9	37	41	33	62	4.24	+ 2.2	11	8,816	n.	48	nw.	19	7	14	9	6.0	49.8	1889	40.1	1893
Cheyenne	6,105	24	23.93	29.98	— .03	44.0	+ 0.9	73	26	57	16	5	31	41	30	64	1.64	+ 0.2	7	10,427	nw.	50	nw.	2	11	13	6	5.1	47.8	1888	33.9	1873
Lander	5,377	....	24.58	30.00	.....	43.6	.....	70	21	58	18	5	29	41	21	48	0.75	.....	7	4,531	w.	48	w.	2	8	16	6	5.0	....	....	.....	....
North Platte	2,841	20	27.00	29.96	— .02	51.2	+ 1.8	88	28	64	21	9	38	46	33	58	1.64	— 0.5	8	9,601	nw.	46	nw.	19	12	13	5	4.7	52.1	1888	42.0	1875
Middle Slope.						62.6	+ 2.3										2.08	— 0.2													
Colorado Springs	6,098	15	23.95	29.98	.....	45.8	+ 0.1	75	26	60	17	9	32	42	19	41	0.25	— 1.6	4	8,755	n.	52	n.	30	14	10	6	3.9	51.5	1885	38.5	1874
Denver	5,287	23	24.68	29.97	— .01	49.6	+ 1.5	80	26	63	23	4	36	37	24	42	3.30	+ 1.2	6	6,562	s.	42	nw.	2	13	11	6	4.4	53.2	1888	39.7	1873
Pikes Peak	.....	17	17.67	.....	.....	15.6	.....	33	26	22	— 5	9	9	21	6	68	2.45	.....	6	18,394	w.	104	sw.	29	12	9	9	5.2	20.8	1888	7.8	1874
Pueblo	4,734	6	25.17	29.93	.....	52.0	.....	83	26	68	22	4	36	48	15	33	0.15	.....	2	7,062	n.	50	n	30	9	16	5	4.7	53.8	1889	47.6	1893
Concordia	1,410	9	28.44	29.94	— .09	57.3	+ 4.2	88	28	71	28	10	44	48	41	64	2.91	— 0.4	9	7,599	s.	36	se.	8	15	8	7	4.0	57.3	1894	51.0	1886
Dodge City	2,523	20	27.31	29.93	— .01	57.6	+ 3.5	86	27	72	30	4	44	44	33	51	1.88	+ 0.2	3	10,693	se.	47	nw.	3	20	9	1	3.1	57.6	1894	48.5	1875
Wichita	1,366	6	28.50	29.95	.....	60.0	.....	85	16	72	33	5	47	39	41	57	3.33	.....	6	8,256	s.	40	n.	8	16	10	4	3.5	60.0	1894	54.6	1892
Oklahoma City	1,239	....	28.67	29.97	.....	62.9	.....	85	8	74	38	10	52	40	46	62	2.82	.....	8	8,314	se.	42	n.	3	18	9	3	3.4	....	....	.....	....
Southern Slope.						.....	.....										.....	.....													
Abilene	1,749	9	28.14	29.94	— .02	68.6	+ 4.5	95	23	80	47	*	57	34	45	50	1.23	— 3.2	7	8,685	se.	31	sw.	30	11	17	2	3.9	69.8	1893	61.5	1886
Amarillo	3,691	....	26.19	29.93	.....	58.0	.....	82	28	69	34	1	47	37	35	50	0.85	.....	6	13,490	s.	64	n.	8	13	10	7	4.6	....	....	.....	....
Southern Plateau.						62.6	+ 0.5										0.37	0.0													
El Paso	3,796	16	26.15	29.95	— .02	65.6	+ 1.3	88	26	79	42	18	52	39	8	15	0.01	— 0.2	1	8,599	nw.	50	nw.	17	16	10	4	3.1	67.8	1880	59.0	1884
Santa Fe	7,051	22	23.21	29.95	.00	49.0	+ 0.9	71	25	60	25	9	38	34	11	29	1.48	+ 0.7	5	5,791	nw.	38	sw.	28	16	11	3	3.5	51.6	1889	41.1	1874
Tucson	2,432	11	27.44	29.94	.....	64.7	— 0.9	91	20	81	34	18	48	45	21	22	T.	— 0.2	0	5,835	nw.	40	sw.	16	23	7	0	2.2	69.0	1881	59.8	1877
Yuma	141	19	29.74	29.89	— .02	71.2	+ 0.7	99	25	88	42	18	55	45	33	31	0.00	— 0.1	0	6,012	w.	42	nw.	27	23	6	1	1.7	75.3	1888	66.7	1878
Middle Plateau.						47.8	— 1.3										0.92	— 0.4													
Carson City	4,720	7	25.31	30.08	.....	48.8	— 0.1	72	9	62	19	17	36	41	22	39	0.27	— 0.3	3	.....	.....	.....	.....	...	22	6	2	2.7	53.8	1888	44.2	1893
Winnemucca	4,340	16	25.67	30.06	+ .08	46.6	— 1.2	77	10	60	23	*	34	42	17	38	0.82	— 0.1	11	8,054	sw.	52	w.	25	10	8	12	5.7	54.6	1888	41.7	1893
Salt Lake City	4,345	21	25.67	30.10	+ .10	48.1	— 2.7	77	25	58	30	16	38	32	27	47	1.67	— 0.7	9	4,958	nw.	37	nw.	2	11	12	7	5.2	55.5	1888	45.8	1883
Northern Plateau.						47.4	— 2.8										1.60	+ 0.2													
Baker City	3,430	....	26.47	30.03	.....	44.8	.....	71	21	54	25	17	35	33	30	61	1.64	.....	6	4,228	nw.	26	se.	25	8	9	13	6.0	....	....	.....	....
Idaho Falls	4,742	....	25.21	30.04	.....	42.8	.....	70	25	54	20	8	31	39	27	62	1.55	.....	11	7,265	s.	36	sw.	7	6	9	15	7.0	....	....	.....	....
Spokane	1,930	14	27.99	30.05	+ .06	47.1	— 2.0	75	20	56	28	16	38	37	31	59	1.00	— 0.2	7	3,995	sw.	30	sw.	29	3	13	14	6.9	52.8	1889	43.7	1893
Walla Walla	1,018	9	29.00	30.09	+ .09	51.6	— 3.6	80	20	61	33	16	42	34	38	62	2.10	+ 0.6	14	5,238	s.	29	sw.	2	6	16	8	5.6	58.1	1888	48.6	1892
N. Pac. Coast Region.						47.1	— 2.2										0.56	+ 2.9													
East Clallam	.....	....	.....	.....	.....	44.6	.....	68	25	52	30	22	37	31	.....	.....	9.60	.....	24	.....	w.	.....	.....	...	3	5	22	.....	.....	.....	.....	.....
Fort Canby	179	11	29.91	30.11	+ .07	46.3	— 2.3	61	19	51	36	15	42	17	41	85	5.42	+ 1.5	20	10,466	nw.	66	s.	6	10	6	14	5.8	51.0	1889	44.8	1893
Neah Bay	.....	10	.....	.....	.....	45.8	— 3.0	62	25	53	31	22	38	25	.....	.....	15.57	+10.4	19	.....	sw.	.....	.....	...	1	9	20	....	51.8	*	45.6	1893
Olympia	52	17	30.05	30.10	+ .07	47.4	— 1.9	74	25	56	30	16	39	32	39	76	3.75	+ 0.4	17	4,562	s.	32	s.	25	5	9	16	7.1	52.8	1889	44.8	1893
Port Angeles	29	10	30.04	30.07	+ .05	44.4	— 1.2	64	25	51	32	*	38	22	36	75	1.88	0.0	16	4,731	s.	35	w.	6	2	19	9	6.4	49.8	1884	42.8	1893
Port Crescent	.....	....	.....	.....	.....	44.5	.....	63	*	53	29	15	36	25	.....	.....	3.26	.....	16	.....	sw.	.....	.....	...	...	6	14	10	.....	.....	.....	.....	.....
Pysht	.....	....	.....	.....	.....	44.8	.....	70	20	54	30	*	36	31	.....	.....	7.49	.....	22	.....	sw.	.....	.....	...	...	6	4	20	.....	.....	.....	.....	.....
Seattle	119	....	29.95	30.08	.....	48.0	.....	75	25	55	34	4	41	28	39	74	4.21	.....	17	4,972	se.	28	sw.	1	1	17	12	6.8	....	....	.....	....
Tatoosh Island	86	11	29.99	30.09	+ .07	44.5	— 2.5	59	25	48	37	*	41	12	40	85	14.59	+ 9.9	24	10,786	sw.	53	e.	25	2	8	20	8.0	50.8	1889	41.8	1890
Astoria	.....	10	.....	.....	.....	48.0	— 1.7	62	9	54	35	15	42	20	.....	.....	7.48	+ 3.2	22	.....	sw.	.....	.....	...	5	5	20	....	52.6	1889	45.7	1893
Portland	157	23	29.96	30.14	+ .09	49.6	— 3.6	76	19	57	34	16	42	31	39	72	2.57	— 0.6	14	6,534	nw.	38	sw.	25	5	12	13	6.7	55.3	1875	45.9	1893
Roseburg	523	17	29.55	30.12	+ .05	50.8	— 1.7	82	19	61	32	17	41	42	39	71	1.20	— 1.4	13	2,701	nw.	36	sw.	25	3	9	18	7.4	56.0	1888	47.4	1893
Mid. Pac. Coast Reg.						56.6	+ 0.1										1.09	— 1.7													
Eureka ‖	64	8	30.11	30.17	+ .07	48.6	— 1.4	64	10	54	36	17	44	18	46	95	2.97	— 0.8	12	5,879	n.	36	n.	11	9	10	7	4.7	53.2	1889	47.8	1893
Red Bluff	342	17	29.70	30.06	+ .05	61.3	+ 0.8	90	19	74	38	27	49	37	39	48	0.55	— 1.9	3	6,432	nw.	36	nw.	10	19	11	0	3.1	67.0	1888	54.1	1892
Sacramento	64	17	29.97	30.04	+ .02	61.3	+ 1.8	86	20	73	39	27	50	32	42	56	0.34	— 2.4	2	6,564	nw.	36	nw.	16	19	7	4	3.2	62.3	1888	54.6	1880
San Francisco	153	24	29.93	30.09	+ .05	55.2	— 0.8	82	19	63	42	27	48	29	44	73	0.50	— 1.6	4	8,533	sw.	37	w.	15	20	7	3	2.8	58.8	1889	52.3	1882
Point Reyes Light	.....	....	.....	.....	.....	49.4	.....	72	19	55	38	27	43	26	.....	.....	0.66	.....	4	.....	nw.	.....	.....	...	15	6	9	.....	.....	.....	.....	.....
S. Pac. Coast Region.						59.1	— 1.2										0.11	— 1.2													
Fresno	338	7	29.65	30.01	+ .01	62.2	+ 0.2	92	20	76	38	28	48	36	40	52	0.10	— 1.2	3	5,472	nw.	30	nw.	15	20	7	3	2.9	67.1	1888	55.9	1893
Los Angeles	330	17	29.67	30.02	+ .01	58.8	— 1.2	85	19	70	41	28	48	33	46	74	0.13	— 1.6	2	3,024	w.	24	nw.	16	10	14	6	4.4	63.3	1885	57.0	1880
San Diego	93	23	29.94	30.04	+ .01	56.4	— 2.6	83	19	63	43	29	50	33	48	76	0.11	— 0.8	2	3,874	sw.	19	w.	27	17	8	5	4.0	62.0	1885	56.0	1872

NOTE.—The data at stations having no departures are not used in computing the district averages. Letters of the alphabet denote number of days missing from the record. *Two or more directions, dates, or years. †Received too late to be considered in departures, etc. ‡All temperature and precipitation normals and extremes of temperature are obtained from Fort Keogh records. ‖All temperature and precipitation normals and extremes of temperature are obtained from Fort Buford records. §All data except precipitation for 26 days only.

TABLE II.—*Meteorological record of voluntary and other co-operating observers, April.* 1894.

Stations.	Temperature. (Fahrenheit.) Max.	Min.	Mean	Precip'n.
Alabama.	°	°	°	*Ins.*
Alco	89	35	67.4	.....
Auburn†	86	39	64.6	2.38
Bermuda *†§	93	41	67.2	3.05
Birmingham†	82°	49°	65.9°	4.48
Brewton†	90	38	66.4	2.25
Carrollton *†	84	44	63.8	4.36
Citronelle†	85	32	69.4	4.23
Claiborne Landing†	.....	.....	.....	5.02
Clanton†	88	39	69.4	4.81
Cordova†	.....	.....	.....	6.63
Daphne†	80	48	70.2	3.09
Demopolis†	.....	.....	.....	3.30
Elba *†	86	50	69.0	3.13
Eufaula a†	90	42	67.8	2.67
Eufaula c†	.....	.....	.....	2.74
Florence a†	.....	.....	.....	2.58
Florence b†	89	34	61.8	2.73
Fort Deposit†	90	43	67.2	5.37
Gadsden†	91	34	63.6	3.94
Geneva†	89	32	67.6	6.15
Greensboro†	88	43	64.9	3.32
Healing Springs†	88	37	63.9	1.91
Highland Home†	87	43	66.3	4.29
Livingston†	.....	.....	.....	4.59
Madison Station†	90	36	64.4	3.05
Maple Grove†	89	32	62.6	3.28
Marion†	88	46	65.0	2.87
Montevallo†	92	38	66.2	3.73
Mount Willing†	89	43	67.5	4.90
Newbern†	90	43	65.4	2.57
Newburg†	91	31	61.3	4.37
Newton†	89	44	66.0	5.21
Opelika†	92	46	69.4	0.48
Oxanna *†	86	36	62.7	4.90
Pine Apple†	90	32	65.2	2.32
Pushmataha†	86	46	67.9	5.08
Rock Mills†	87	37	63.2	3.81
Scottsboro†	87	34	60.5	3.00
Selma†	.....	.....	.....	2.82
Starlington *†	90	40	66.6	4.50
Sturdevant†	.....	.....	.....	1.52
Talladega b†	90	38	63.0	3.10
Tallassee Falls †	.....	.....	.....	2.43
Tuscaloosa†	92	38	63.6	4.46
Union†	98°	42°	68.8°	4.14
Union Springs a†	92	40	65.6	4.28
Uniontown	88	36	67.2	3.80
Valley Head†	86	32	59.4	3.04
Warrior†	.....	.....	.....	3.80
Wetumpka	.....	.....	.....	1.79
Wilsonville†	.....	.....	.....	3.11
Alaska.				
Killisnoo†	52	19	34.2	4.20
Metlakahtla†	56	24	39.2	10.56
Arizona.				
Antelope Valley†	.....	.....	.....	0.00
Arizola†	97	42	68.6	0.00
Ariz. Canal Co. Dam	93	43	71[1]	0.00
Benson *§	89	57	70.7	0.00
Bisbee *†	80°	35°	60.0°	0.00
Buckeye†	98	35	66.9	0.00
Calabasas†	86	30	59.7	0.08
Casa Grande *§	91	35	72.0	0.00
Dragoon†	.....	.....	.....	0.00
Dragoon Summit *§	86	40	67.6	0.00
Dudleyville†	93	37	65.5	T.
Eagle Pass *§	.....	36	53.8	0.35
Farleys Camp‡	.....	.....	66.2	0.25
Flagstaff†	74	21	47.5	0.33
Fort Apache	82	24	53.4	0.19
Fort Bowie†	83	37	63.1	0.01
Fort Grant	85	29	58.4	0.13
Fort Huachuca	84	34	58.9	0.00
Gila Bend *§	98	54	73.1	0.00
Globe†	90	39	65.4	0.01
Holbrook†	83	26	54.2	0.57
Keams Canyon†	76	19	49.3	0.22
Maricopa *§	100	64	77.5	0.00
Mount Huachuca†	83	32	60.4	0.00
Natural Bridge†	.....	.....	.....	T.
Nogales *†	89	49	72.6	0.00
Oracle†	83	38	62.2	0.03
Palomas†	96	34	68.0	0.00
Pantano *§	86	38	61.9	0.00
Peoria†	91	45°	67.6	0.00
Phœnix a†	96	34	66.4	0.00
Phœnix b†	94	42	68.2	0.00
Red Rock *§	99	45	79.4	0.00
Reymert†	87	40	65.8	0.00
Ryo†	92	32	61.4	0.00
St. Helena R'h†	84	33	62.0	T.
San Carlos	93	31	63.4	0.11
San Simon *§	93	44	65.3	0.00
Show Low	.....	.....	.....	0.80
Signal†	95	37	66.2	0.00
Texas Hill *§	102	57	75.9	0.00
Tucson a†	92	38	66.9	0.00
Tucson b *§	89	55	76.3	0.00
Walnut Ranch *†‖	80	41	58.0	0.00
Whipple Barracks	85	15	51.0	0.00
Wilgus†	.....	.....	.....	0.00
Willcox *§	82	35	59.5	0.00
Yuma *§	100	54	78.2	0.00
Arkansas.				
Arkadelphia†	.....	.....	.....	7.81
Arkansas City†	.....	.....	.....	3.65
Ashdown†	88	39	64.6	7.71
Bee Branch †[4]	87	35	61.0	2.26
Blanchard Springs†	87	35	65.8	8.62
Brinkley†	89	38	62.4	5.34
Camden a†	.....	.....	.....	7.22
Camden b†	88	37	65.4	7.77
Cassville†	81	41	58.6	7.47
Conway *‖	87	42	62.3	1.29
Cornerstone *‖	86°	50	65.6[4]	6.02
Corning†	91	34	59.2	2.66
Dallas †[6]	87	41°	62.0	9.93
Dardanelle†	.....	.....	.....	5.27
Fayetteville†	89	35	61.2	3.31
Forrest†	91	38	64.6	5.63
Fulton†	.....	.....	.....	6.29
Gaines Landing†	.....	.....	.....	5.03
Hamburg	88	38	64.7	7.66
Helena a†	.....	.....	.....	7.92
Helena b†	91	40	64.0	6.67
Hot Springs a	89	40	63.6	8.45
Hot Springs b	.....	.....	.....	9.94
Hot Springs (near)	.....	.....	.....	10.44
Keesees Ferry†	91	29	60.5	3.85
Kirby†	86	40	66.4	11.25
Lonoke *‖	88	42	65.4	5.13
Madding[2]	.....	.....	66.9	.....
Malvern†	85	38	61.9	5.85
Mount Ida†	86	34	62.2	7.44
Mount Nebo†	83	37	64.2	5.93
New Gascony *‖[4]	86	50	65.6	6.02
Newport a†	.....	.....	.....	3.69
Newport c†	86	37	61.0	3.93
Osceola†	88	37	61.2	5.95
Ozark†	91	40	63.8	10.49
Pocahontas†	88	30	60.4	2.63
Rison†	88	36	64.2	9.23
Rogers†	88	.....	.....	2.93
Russellville†	90	38	63.2	5.34
Searcy†	88	36	62.0	4.25
Stuttgart†	87	43	64.0	7.42
Texarkana†	87	40	67.8	7.01
Warm Springs *‖	94	44	60.8	1.90
Washington†	85	42	65.3	12.73
Wigus	.....	.....	.....	6.45
Winslow†	82	35	59.6	4.85
California.				
Adin	74	23	46.6	0.83
Ager	86	26	53.3	0.00
Agnew	87	35	56.4	0.33
Anaheim *§	81	50	61.1	0.13
Anderson *‖	86	38	56.5	0.61
Antioch *§	87	46	63.5	0.28
Aptos *§	80	36	55.8	0.89
Arlington Heights	90	34	60.8	0.02
Athlone *§	95	44	62.8	0.37
Auburn *§	85	40	61.6	1.35
Bakersfield a *§	89	43	66.4	0.00
Ballast Point L. H.	.....	.....	.....	0.10
Barstow†	90	37	64.0	0.00
Beaumont *§	90	38	65.4	0.32
Belmont *§	85	47	58.7	.....
Berendo *§	95	50	67.5	0.10
Berkeley	80	40	55.6	0.57
Bethany *‖	86	42	60.4	0.00
Bishop Creek *§	91	38	65.0	0.05
Boca *§	75	15	41.3	1.00
Borden *§	90	44	63.5	0.08
Boulder Creek *§	88	36	59.7	2.44
Brentwood *§	90	46	60.7	0.12
Brighton *§	85	40	63.9	0.10
Byron *§	86	44	60.7	0.10
Caliente *§	90	45	65.5	0.20
Calistoga *§	88	41	59.7	2.45
Campo Seco	.....	.....	.....	0.80
C. Mendocino L. H.	.....	.....	.....	1.48
Capitola *§	82	44	57.5	.....
Castroville *§	72	43	55.4	0.40
Centerville *‖	89	.....	59.4	0.54
Chico *§	88	36	60.1	0.00
Chino *§	90	44	60.4	.....
Cisco *§	52	21	37.2	.....
Claremont†	91	31	56.8	0.33
Cloverdale *‖	87	36	62.0	1.91
Colegrove	.....	.....	.....	0.20
Colfax *§	93	32	55.9	.....
Colton *§	90	44	65.1	0.10
Colusa†	86	33	60.8	0.20
Corning *§	98	44	64.9	0.40
Crescent City	64	32	48.2	4.41
Crescent City L. H.	.....	.....	.....	4.35
Crofton *§	87	45	64.4	0.20
Davisville a *§	82	40	59.9	0.30
Davisville b	97	41	67.5	0.29
Deep Creek	.....	.....	.....	0.70
Delano *§	90	50	66.8	0.16
Delta *§	89	38	63.0	2.75
Dinuba *§	98	50	68.8	0.00
Downey *§	88	50	61.8	0.20
Dry Creek *†‖	.....	42	58.0	.....
Drytown	85	32	57.7	1.03
Dunnigan *§	88	41	61.9	0.48

Meteorological record of voluntary observers, &c.—Continued.

Stations.	Temperature. (Fahrenheit.) Max.	Min.	Mean	Precip'n.
California—Cont'd.	°	°	°	*Ins.*
Dunsmuir *§	81	32	54.0	1.70
East Brother L. H.	.....	.....	.....	0.16
Edgwood *§	74	33	50.0	0.15
Edmanton *‖	72	22	43.3	3.94
Eldorado *§	87	41	60.8	1.63
Elmira *§	87	42	64.9	0.57
El Verano *§	84	41	59.0	1.16
Emigrant Gap *§	59	24	42.8	2.62
Esparto *§	91	48	62.3	0.56
Evergreen	.....	..	.....	0.42
Exeter *§	95	45	65.7	0.30
Fall Brook *‖	83	36	56.6	0.08
Farmington *§	82	43	62.0	0.50
Felton *§	96	34	58.1	1.54
Fernando *§	88	36	57.5	0.24
Florence *§	85	40	63.0	.....
Florin *§	90	38	58.4	0.59
Folsom City a *§	92	42	63.8	0.35
Folsom City b *‖	93	49	62.5	0.51
Fort Ross	.....	.....	.....	2.37
Fresno *§	92	46	65.9	0.10
Fruto *§	85	43	62.4	0.50
Galt *§	89	49	63.4	0.61
Georgetown†	79	31	55.3	2.40
Gilroy *§	80	43	61.0	0.55
Girard *§	80	32	52.6	0.18
Glen Ellen *§	87	40	59.1	2.03
Gormans Station†	.....	.....	.....	0.60
Goshen *§	92	42	68.6	0.00
Grass Valley a	.....	.....	.....	1.67
Green Valley	.....	.....	.....	0.75
Greenville *†‖	75	22	45.4	2.05
Gridley *‖	90	40	60.8	1.04
Guinda	.....	.....	.....	0.81
Haywards *§	80	42	56.1	0.42
Healdsburg *‖	84	34	53.8	1.88
Hendersons Ranch	.....	.....	.....	0.15
Hollister *§	92	41	61.9	0.40
Hornbrook *§	80	32	52.1	0.00
Humboldt L. H.	.....	.....	.....	1.77
Huron *§	90	40	59.7	0.10
Hydesville†	74	33	49.9	2.15
Independence†	86	32	60.0	0.02
Indio a *§	100	53	75.3	0.00
Indio b	99	50	75.7	0.00
Ione *§	89	44	63.5	0.51
Iowa Hill *‖	83	35	57.1	2.10
Jolon	.....	.....	.....	0.22
Julian†‖	81	26	51.5	0.32
Keeler *§	84	44	60.0	T.
Keene *§	84	36	55.1	0.55
Kelseyville	91	29	56.2	1.69
Kennedy Gold Mine	85	35	57.0	1.48
Kernville	.....	.....	.....	0.17
King City *§	102	36	63.3	0.06
Kingsburg *§	92	45	63.3	0.00
Knights Landing *§	92	?	60.6	0.32
Kono Tayee	79	.	57.6	0.91
Lagrange *§	95	38	62.6	0.30
La Porte *†‖	65	28	42.7	3.05
Lathrop *§	87	47	62.6	0.12
Laurel *§	88	37	57.7	1.86
Lemoore a *§	92	40	64.1	0.00
Lemoore b	93	38	63.3	0.09
Lick Observatory†	72	25	49.4	0.89
Lime Point L. H.	.....	.....	.....	0.21
Little Bear Valley	.....	.....	.....	0.62
Little Bear Valley (near)	.....	.....	.....	0.67
Livermore *§	85	37	55.5	0.58
Livingston *§	90	42	66.2	0.29
Lodi	87	37	59.6	0.44
Long Beach *§	78	46	57.2	.....
Los Angeles *§	86	54	63.4	0.19
Los Banos *§	88	44	69.9	0.00
Los Gatos a *§	90	42	62.8	1.25
Los Gatos b	82	35	54.8	1.50
Lower Holcomb Valley	.....	.....	.....	0.40
Mammoth Tank *§	100	58	75.4	0.00
Manzana *‖	89	30	55.9	T.
Mare Island L. H.	.....	.....	.....	0.60
Mariposa *‖	81	35	56.7	1.06
Martinez *§	80	40	53.7	0.64
Marysville a *§	90	39	61.1	0.47
Mendota *§	92	40	64.9	0.10
Menlo Park *§	84	40	58.6	0.00
Merced *§	89	43	60.5	0.28
Middletown *†‖	94	34	57.9	2.65
Mills College	.....	.....	.....	0.73
Milton *§	92	40	59.5	0.92
Milton (near) *‖	90	45	62.5	0.98
Modesto *§	95	46	63.6	0.23
Mohave *§	90	41	64.0	T.
Mokelumne Hill *§	.....	38	56.2	1.36
Monson *§	90	55	66.0	0.11
Montague *§	77	42	57.1	0.05
Monterey *§	78	40	56.6	0.60
Monterey (Hotel del Monte) *§	73	41	56.0	.....
Morses House	.....	.....	.....	1.37
Mount Glenwood *‖	85	44	64.8	0.97
Mutah Flat	.....	.....	.....	0.13
Napa a *§	85	37	59.8	1.02
Napa b	84	39	60.5	0.61
National City†	89	41	58.1	0.04
Needles†	95	46	72.3	0.00
Nevada City †	77	27	51.7	2.17
New Almaden *§	87	44	57.9	0.68
Newark *§	82	46	60.9	0.45
Newcastle a†	86	34	57.9	1.04
Newcastle b *§	87	40	62.7	1.22
Newhall *§	92	42	61.0	0.15
Newman *§	91	37	69.3	T.
Niles *§	84	46	58.8	0.55
Nordhoff†	90	32	56.2	0.19
Norwalk *§	86	50	61.5	0.33
Oakdale a *‖	87	43	60.4	0.88
Oakdale b *§	90	41	61.0	0.88
Oakland a	80	41	57.0	0.41
Oakland b *§	71	43	54.9	0.49
Ogilby *§	99	49	75.9	0.00
Oleta *‖	80	36	54.4	1.13
Ontario a *§	93	50	64.4	0.10
Ontario b	95	36	62.0	0.12
Orangevale †	88	37	60.2	0.52
Orland *§	90	44	62.4	0.53
Oroville a *§	87	39	63.9	1.20
Pajaro *§	80	39	54.5	0.30
Palermo†	89	35	60.7	0.74
Palm Springs *§	100	51	75.4	0.00
Paso Robles a *§	88	42	60.8	0.52
Paso Robles b	87	30	58.3	0.24
Petaluma *‖	92	48	59.5	0.69
Piedras Blancas L.H	.....	.....	.....	0.47
Pigeon Point L. H	.....	.....	.....	0.22
Placerville a *§	82	32	57.0	2.35
Placerville b	78	28	52.9	2.24
Pleasanton a *§	94	37	57.5	0.75
Pleasanton b	88	25	54.3	0.95
Pt. Ano Nuevo L. H.	.....	.....	.....	0.50
Point Arena L. H	.....	.....	.....	1.83
Point Bonita L. H.	.....	.....	.....	0.87
Pt. Conception L.H.	.....	.....	.....	0.04
Point Fermin L. H.	.....	.....	.....	0.35
Point George L. H	.....	.....	.....	1.81
Pt. Hueneme L. H.	.....	.....	.....	0.23
Point Montara L. H.	.....	.....	.....	1.00
Point Pinos L. H.	.....	.....	.....	0.80
Point Reyes L. H.	.....	.....	.....	0.66
Point Sur L. H.	.....	.....	.....	0.76
Pomona *§	93	42	58.8	0.08
Portersville *§	93	48	68.5	0.32
Port Los Angeles *§	70	48	56.4	0.28
Poway *§	.....	47	54.6	0.14
Puente *§	92	48	62.0	0.08
Ravenna *§	88	40	59.7	0.15
Red Bluff *§	91	44	60.9	0.60
Redding a *§	92	42	61.7	2.60
Redding b†	85	35	60.4	1.84
Redlands a	.....	.....	.....	0.25
Redlands b *§	88	45	61.9	0.31
Represa	82	27	56.9	0.56
Rio Vista	87[4]	43[4]	64.2[4]	0.35
Rocklin *§	86	43	63.3	0.32
Roe Island L. H.	.....	.....	.....	0.25
Sacramento a	84	38	60.0	0.36
Sacramento b *§	83	47	62.0	0.16
Sacramento c *§	83	47	62.2	0.33
Salinas *§	65	40	51.6	0.45
Salton *§	103	54	80.4	0.00
San Ardo a *§	98	39	59.4	0.10
San Bernardino†	88	32	60.3	0.40
San Gabriel *§	89	47	61.5	0.07
Sanger Junction *§	95	45	67.2	0.21
San Jose a *§	81	42	57.6	0.63
San Jose b	85	29	54.4	0.52
San Luis L. H.	.....	.....	.....	0.06
San Luis Obispo	.....	.....	.....	0.41
San Mateo *§	83	48	59.9	0.94
San Miguel *§	80	44	59.7	0.06
San Miguel Isl'd †	80	42	55.7	0.34
San Pedro *§	85	52	62.5	0.14
San Rafael †	81	27	52.0	0.98
Santa Ana *§	88	52	67.7	0.10
Santa Barbara a	82	44	57.1	0.24
Santa Barbara b *§	78	49	58.7	0.35
Santa Barbara L. H.	.....	.....	.....	0.23
Santa Clara a *‖	82	37	55.6	0.49
Santa Clara b	92	33	56.4	0.53
Santa Cruz a *§	82	42	55.9	0.77
Santa Cruz b†	86	36	58.1	0.66
Santa Cruz L. H.	.....	.....	.....	0.71
Santa Margarita *§	91	36	58.6	0.85
Santa Monica *§	70	50	58.1	T.
Santa Paula *§	88	48	58.6	0.23
Santa Rosa *§	83	45	58.5	1.08
Saticoy †	.....	.....	.....	0.10
Selma *§	94	50	66.2	0.08
Shasta Springs †	80	25	49.1	3.55
Shingle Springs *§	82	35	55.4	1.03
Sima *§	83	30	51.6	1.00
Sisson *§	85	26	46.3	0.70
Sneddens Ranch	.....	.....	.....	0.16
Soledad *§	90	42	57.4	0.22
Sonoma *§	86°	36°	52.7°	1.00
S. E. Farrallon L. H	.....	.....	.....	0.77
South Vallejo *§	81	45	59.7	0.54
Spadra *§	85	43	62.2	.....

Meteorological record of voluntary observers, &c.—Continued.

Stations.	Temperature. (Fahrenheit.) Max.	Min.	Mean	Precip'n.
California—Cont'd.	°	°	°	*Ins.*
Squirrel Inn	.....	.....	.....	1.17
Stockton *a*	82	40	60.0	0.10
Stockton *b* [*8]	86	51	62.3	0.15
Suisun City [*8]	90	48	63.2	0.41
Summit [*8]	52	18	35.5	.....
Susanville [*†1]	73	31	47.8	0.95
Sutter Creek [*5]	80	28	54.8	1.12
Tehachapi *a* [*8]	75	30	54.3	.....
Tehachapi *b*	80	26	51.9	0.18
Tehama [*8]	87	41	61.3	0.50
Templeton [*8]	88	37	58.7	0.52
Towles [*8]	78	34	52.3	2.42
Tracy [*8]	87	48	64.8	0.03
Traver [*8]	85	55	70.6	0.00
Trinidad L. H.	.....	.....	.....	2.94
Tropico [*8]	88	40	59.8	0.04
Truckee [*8]	64	18	41.7	2.15
Tulare *a* [*8]	91	45	65.7	0.09
Tulare *b*	.....	.....	.....	0.13
Tulare *c*	102	34	64.0	0.90
Tunnel No. 2	.....	.....	.....	0.48
Turlock *a* [*5]	92	52	68.4	0.17
Turlock *b* †	91	34	60.4	0.16
Ukiah †	83	32	54.5	2.36
Upper Lake	87	34	56.9	1.46
Upper Mattole [*1]	92	38	56.0	3.80
Vacaville *a* [*1]	89	45	62.8	0.62
Vacaville *b* [*8]	94	47	65.9	0.63
Valley Springs [*8]	92	40	65.1	0.95
Ventura †	85	37	55.0	0.17
Vina [*8]	89	39	63.8	0.89
Volcano Springs [*8]	105	55	84.0	0.00
Walnut Creek	89	35	59.8	0.79
Weaverville †	85	25	55.1	.....
Wenrich Ranch	.....	.....	.....	0.25
West Butte [*]	84	33	.....	0.36
Westley [*8]	89	55	68.8	0.94
West Point †	.....	.....	.....	2.16
Wheatland	89	38	60.9	0.66
Whittier [*8]	84	52	62.9	0.10
Williams [*8]	88	40	62.6	0.15
Willows *a* †	84	33	58.0	0.47
Willows *b* [*8]	85	48	62.0	0.40
Winters [*8]	87	44	64.4	0.60
Wire Bridge [*8]	86	40	61.7	1.27
Woodland [*8]	85	47	62.6	0.33
Yerba Buena L. H.	.....	.....	.....	0.65
Yreka †	81	24	49.8	0.10
Yuba City [*8]	80	45	64.6	0.46
Colorado.				
Abbott	.....	.....	.....	1.55
Akron †	88	18	48.4	0.05
Alma †	55	7	31.3	1.22
Amherst †	.....	.....	.....	0.29
Arboles	.....	.....	.....	0.40
Avoca	.....	.....	.....	0.40
Boulder †	81	29	52.6	2.30
Box Elder	.....	.....	.....	0.43
Breckenridge †	60	— 5	29.4	4.66
Brush †	86	18	50.8	1.77
Byers [*1]	81	22	41.5	.....
Canyon †	81	20	52.7	0.75
Castle Rock †	81	11	47.0	1.90
Cheyenne Wells [*†1]	92	28	44.0	0.62
Climax [*†1]	47	0	20.4	4.61
Collbran	.....	.....	.....	1.23
Como (near) †	59	9	33.9	0.99
Cope †	85	18	51.8	0.66
Deer Trail [*5]	75	23	51.8	0.45
Delta †	87	19	50.4	0.00
Divide Ex. Station.	71	10	41.4	1.95
Downing †	81	21	50.5	1.96
Dumont	68	16	41.3	2.50
East Dale	.....	.....	.....	T.
First View [*8]	84	.....	54.3	0.44
Fort Collins †	79	16	48.4	0.89
Garnet	.....	.....	.....	0.02
Glen Eyrie †	73	20	47.8	0.40
Glenwood Sp'gs †	78	30	51.4	0.91
Gold Hill [*5]	71	18	45.0	3.75
Grand Junction †	79	28	53.4	0.15
Greenhorn †	80	13	47.5	1.30
Gunnison † [*]	67	14	40.6	0.40
Holly †	.....	.....	.....	0.45
Hugo [*8]	83	29	55.4	1.00
Hugo (near) †	81	12	46.0	1.11
Husted †	76	12	47.0	1.17
Julesburg	86	20	54.2	0.61
Kit Carson [*]	84	.....	.....	0.00
La Jara †	73	15	45.4	0.06
La Porte	.....	.....	.....	0.75
Las Animas †	81	18	53.2	0.07
Lavender †	73	22	46.8	0.31
Lay [*†1]	71	23	43.4	1.94
Le Roy [*†1]	85	18	50.4	0.98
Leslie	.....	.....	.....	0.78
Loveland	.....	.....	.....	1.18
Manhattan	.....	.....	.....	2.23
Meeker †	86	13	45.0	1.99
Minneapolis †	85	28	55.2	1.51
Monte Vista	72	15	43.0	0.31
Moraine †	65	16	40.2	1.80
Pagoda (near) †	71	18	42.0	2.75
Parachute †	80	25	50.7	0.34
Red Cliff	.....	.....	.....	3.59
Colorado—Cont'd.	°	°	°	*Ins.*
River Bend [*6]	84	30	57.5	0.60
Rocky Ford †	87	24	53.4	0.60
Sagauche †	73	15	44.2	0.33
St. Cloud	.....	.....	.....	2.40
San Luis †	76	10	43.4	0.55
Seibert †	.....	.....	.....	1.18
Smoky Hill Mine †	71	15	43.3	4.00
Springfield †	.....	.....	.....	1.59
Stamford [*1]	64	12	33.6	1.65
Steamboat Spr'gs †	78	6	38.9	2.10
Sunnyside	64	8	35.6	2.54
Surface Creek †	73	22	48.2	0.10
Thon †	85	15	47.2	0.48
T. S. Ranch †	79	24	50.4	0.36
Twin Lakes	.....	.....	.....	2.62
Vilas	.....	.....	.....	0.79
Wallet †	.....	.....	.....	0.10
Yuma	.....	.....	.....	0.68
Connecticut.				
Bridgeport [*1]	72	27	46.4	2.40
Canton	77	20	47.6	2.54
Colchester	74	19	46.2	4.59
Falls Village	.....	.....	.....	2.55
Greenfield Hill	.....	.....	.....	2.52
Hartford *b*	.....	.....	.....	2.76
Hartford *c*	76	24	43.6	.....
Lake Konomoc	.....	.....	.....	3.21
Lebanon	.....	.....	.....	3.32
Middletown	77	19	47.6	2.51
New Hartford *a* [*†]	73	20	43.8	2.55
N. Grosvenor Dale	77	12	46.7	2.84
Norwalk	76	17	46.0	1.82
Southington [*1]	74	20	46.7	2.35
South Manchester	.....	.....	.....	1.94
Stevenson	.....	.....	.....	2.45
Storrs	74	15	44.8	2.67
Voluntown †	74	16	46.2	4.12
Wallingford †	.....	.....	.....	3.30
Waterbury	73	21	47.4	3.16
West Simsbury	.....	.....	.....	2.22
Delaware.				
Kirkwood [*2]	82	.....	48.0	.....
Milford	78	28	52.6	4.40
Millsboro	81	28	51.4	4.37
Newark	78	21	49.4	3.38
Wilmington †	81	26	53.6	3.38
District of Columbia.				
Dist'ing Reserv'r [*5]	78	33	53.6	2.25
Rec'ing Reserv'r [*5]	77	32	52.6	2.56
West Washington	85	28	55.0	3.37
Florida.				
Amelia †	80	47	66.9	0.10
Archer †	90	43	70.6	1.44
Brooksville †	86	51	69.5	0.97
Clermont †	90	53	72.4	0.29
De Land †	86	42	67.4	.....
Eustis †	89	51	72.5	1.10
Federal Point †	85	44	67.2	1.78
Fort Meade †	87	43	68.4	0.24
Grasmere †	85	47	67.0	0.50
Green Cove Sp'gs †	82	41	66.8	1.00
Homeland †	87	42	69.6	0.40
Kissimmee †	93	49	72.0	1.37
Lake City †	87	50	70.9	2.26
Manatee †	90	50	69.7	0.44
Merritts Island †	86	58	82.8	0.22
Moseley Hall †	85	48	68.6	3.98
Mullet Key †	85	55	72.3	0.51
Myers †	88	51	72.1	1.30
New Smyrna †	85	44	65.0	2.49
Oak Hill [*1]	84	59	72.9	.....
Ocala [*†1]	85	53	69.6	0.03
Orange City †	90	41	69.2	0.63
Orange Park	87	43	67.8	1.44
Orlando † [‡]	88	51	71.2	1.14
Plant City †	93	46	71.2	0.31
St. Francis B'ks	89	47	66.0	2.16
St. Petersburg †	91	55	73.5	0.68
Tallahassee †	89	47	68.2	3.55
Tarpon Springs †	85	53	71.4	0.75
Georgia.				
Adairsville †	90	33	61.0	2.49
Alapaha †	89	42	67.2	3.41
Albany †	94	43	68.4	2.96
Americus †	95	41	68.4	2.37
Athens *a*	86	38	61.5	1.76
Bainbridge *b* †	.....	.....	.....	4.00
Blakely [*†5]	88	46	67.3	3.67
Brag †	91	36	66.0	1.48
Camilla	88	42	67.4	3.07
Canton †	.....	.....	.....	3.08
Clayton †	85	28	56.4	2.66
Columbus †	95	40	68.0	1.20
Covington	90	35	62.8	2.81
Dahlonega †	90	32	59.8	2.47
Darien †	87	42	67.0	0.96
Diamond †	.....	.....	.....	3.38
Dublin *a* †	89	35	64.4	1.68
Dublin *b* †	.....	.....	.....	1.69
Elberton †	92	35	63.0	1.86
Fleming †	90	36	65.3	2.12
Forsyth [*1]	88	44	66.5	1.86
Gillsville [*†1]	89	37	59.4	2.12
Griffin †	82	32	58.0	1.44
Hawkinsville †	89	38	64.0	1.57

Meteorological record of voluntary observers, &c.—Continued.

Stations.	Temperature. (Fahrenheit.) Max.	Min.	Mean	Precip'n.
Georgia—Cont'd.	°	°	°	*Ins.*
Hephzibah [*†3]	82	42	61.0	4.16
Lafayette †	87	33	60.0	2.25
Lagrange †	88	37	63.8	2.41
Lawrenceville †	85	.....	.....	1.49
Leverett †	85	34	59.9	1.96
Macon *b* †	.....	.....	.....	1.29
Marietta †	88	34	60.2	1.92
Marshallville †	87	45	66.4	2.57
Millen †	93	34	65.0	1.09
Monticello [*†1]	82	44	65.6	1.90
Morgan †	89	40	66.3	4.73
Piscola	90	47	68.4	3.90
Point Peter [*1]	88	36	62.2	2.90
Poulan †	89	38	65.8	3.00
Ramsey †	89	32	59.6	2.92
Resaca †	.....	.....	.....	2.62
Reynolds †	.....	.....	.....	2.08
Rome †	87	36	60.9	2.84
Talbotton †	85	37	64.0	1.35
Thomasville †	89	43	67.6	3.72
Toccoa †	89	34	60.6	2.61
Washington †	89	38	63.3	1.42
West Point †	90	37	64.8	2.28
Whitesburg †	.....	.....	.....	2.94
Idaho.				
American Falls †	77	25	45.0	1.40
Atlanta †	48	12	31.6	3.30
Boise Barracks	84	26	51.0	1.26
Egin †	70	21	42.2	1.55
Fort Lemhi †	75	18	46.2	1.89
Fort Sherman †	76	26	45.4	2.50
Fraser †	73	24	44.6	2.26
Garden Valley [*†1]	72	24	43.6	3.55
Grangeville	70	26	44.6	1.85
Hailey †	72	16	41.4	1.07
Idaho City †	79	16	44.4	3.33
Kootenai †	72	22	42.6	0.45
Lake †	64	6	36.6	0.95
Lewiston †	83	27	52.8	0.88
Martin †	67	18	39.1	1.75
Moscow †	76	25	46.6	1.38
Murray †	72	21	41.2	3.49
Nampa	83	22	49.0	1.84
Oakley †	80	20	46.4	0.96
Paris †	71	21	42.2	1.35
Payette †	87	22	51.5	1.34
Preston [*†5]	72	23	42.8	.....
Salubria †	82	23	49.6	2.17
Soldier †	69	10	36.5	1.08
Illinois.				
Albion †	88	31	56.0	3.09
Atwood [*8]	.....	26	48.7	2.84
Aurora †	86	25	50.3	2.49
Beardstown †	.....	.....	.....	2.26
Bloomington †	91	27	54.4	2.53
Braidwood †	89	30	53.2	2.23
Bushnell †	90	27	53.9	2.46
Carlinville †	90	27	58.4	3.12
Carlyle	.....	.....	.....	2.20
Carrollton	87	33	55.8	2.02
Chemung †	85	24	49.3	3.34
Chester †	.....	.....	.....	2.84
Decatur †	94	23	55.0	3.06
Dixon †	85	23	51.4	2.04
East Peoria †	90°	26°	53.4°	2.04
Effingham †	88	27	55.4	3.27
Evanston [*10]	86	30	45.5	.....
Fort Sheridan †	83	26	46.9	4.70
Galva †	91	26	54.2	1.71
Golconda †	89	34	58.6	3.73
Grafton †	.....	.....	.....	2.33
Greenville †	90	30	56.0	3.52
Griggsville †	88	32	55.5	2.85
Halliday [*3]	86°	41°	56.2°	3.75
Havana †	89	33	56.2	1.68
Herrins Prairie [*1]	84	38	59.0	1.60
Jordans Grove †	87	31	56.8	3.93
Kankakee †	.....	.....	.....	3.54
Louisville †	87	31	55.2	3.20
McLeansboro [*1]	93	34	55.4	3.38
Martinsville †	86	32	54.4	3.72
Mascoutah [*5]	92	28	55.7	3.50
Mattoon [*1]	87	38	55.2	1.81
Monmouth †	90	29	53.4	2.10
Mount Carmel †	.....	.....	.....	3.18
Mount Pulaski	89	28	54.9	2.60
Olney *a* [*1]	89	29	57.0	2.80
Olney *b* [*1]	92	25	52.1	3.68
Oswego [*1]	85	27	48.0	2.82
Ottawa †	90	26	52.2	1.51
Paris †	88	25	54.5	2.17
Peoria *a* †	.....	.....	.....	1.22
Peoria *b*	92	32	56.0	2.22
Philo †	87	26	52.4	3.63
Rantoul [*†5]	89	30	53.8	3.58
Riley †	82	26	48.6	2.62
Rushville	95	33	55.6	3.11
St. John [*3]	88	36	55.2	2.62
South Chicago [*10]	84	30	49.0	.....
Streator †	75	29	52.2	1.03
Sycamore [*†1]	81	29	49.0	2.87
Tuscola [*†1]	88	30	51.6	4.32
Walnut †	92	27	54.6	1.23
Warsaw †	.....	.....	.....	1.03
Winnebago †	81	28	49.6	2.74
Indiana.	°	°	°	*Ins.*
Angola [*1]	85	27	50.0	1.90
Ashboro †	87	33	54.5	2.30
Bedford †	87	30	53.9	3.15
Butlerville †	86	28	53.7	2.27
Cambridge City †	82[f]	30[f]	52.3[f]	1.93
Columbia City [*1]	83	29	49.5	3.42
Columbus	86	28	53.8	2.34
Connersville †	83	29	52.3	1.78
Degonia Springs [*8]	86	33	56.4	4.75
Delphi	85	24	50.0	2.66
Evansville †	.....	.....	.....	4.10
Farmland †	83	28	52.4	1.95
Franklin [*1]	85	33	53.7	2.87
Hammond †	88	28	51.8	2.20
Hawpatch †	82	23	48.3	3.77
Huntingburg [*†1]	88	39	57.5	5.40
Huntington	84	30	52.5	3.20
Jasper †	87	28	55.6	3.41
Jeffersonville	87	32	55.5	3.83
Kokomo †	88	28	52.5	3.31
Laconia	86	30	54.3	3.10
Lafayette †	86	25	52.5	2.56
Logansport *a* †	.....	.....	.....	4.91
Logansport *b*	85	29	53.2	3.68
Madison †	88	32	55.6	3.01
Marengo [*1]	91	30	55.1	7.70
Marion †	86	26	52.5	2.48
Markle †	84	24	50.5	2.76
Mauzy	84	26	50.8	2.09
Mount Vernon †	90	31	55.5	3.80
Muncie †	85°	33°	55.1°	3.55
New Albany [*†1]	85	35	56.7	3.64
Plymouth †	86	28	51.6	2.23
Princeton [*†1]	91	31	54.8	4.20
Rockville †	88	26	53.4	2.66
Rushville †	.....	.....	.....	2.09
Seymour †	86	32	54.9	2.51
Shelbyville †	86°	31°	54.3°	2.24
South Bend †	82	28	50.4	3.57
Terre Haute †	90	32	55.8	2.11
Union City †	87	26	51.8	1.08
Valparaiso †	83	25	47.6	2.70
Vevay	86	32	55.4	2.54
Vincennes †	94	32	56.6	3.39
Worthington †	89	28	55.2	2.81
Indian Territory.				
Eufaula †	.....	.....	.....	7.92
Gwenndale †	89	30	60.4	5.34
Healdton †	88	40	68.6	4.56
Kemp †	90	39	67.2	4.52
Lehigh †	88	34	65.2	4.68
Purcell †	89	32	62.6	3.79
Tahlequah †	90	38	64.0	3.04
Tulsa †	.....	.....	.....	4.80
Iowa.				
Albia	90	26	52.8	1.37
Algona [*1]	77	28	49.7	4.81
Alta †	80	20	49.4	3.59
Amana †	87	25	52.0	2.55
Ames *b*	83	18	50.3	4.25
Ames *c*	.....	.....	.....	4.28
Atlantic †	92	18	52.9	1.52
Audubon	87	22	51.8	2.32
Belle Plaine	87	24	52.1	2.04
Bonaparte †	89	28	53.1	2.83
Carroll †	85	18	49.9	2.80
Cedar Falls †	82	23	51.8	2.07
Cedar Rapids †	84	28	53.2	1.65
Centerville †	89	34	59.2	2.30
Charles City †	78	25	49.5	4.28
Clarinda †	86	28	53.3	2.06
Clinton	88	24	52.7	1.92
College Springs	90	27	54.2	1.50
Corning †	88	24	52.9	1.29
Cresco †	78	24	48.7	3.21
Decorah †	79	22	50.1	3.64
Delaware [*8]	81	28	48.8	2.88
Elkader †	82	22	50.9	4.16
Emmetsburg	.....	.....	.....	3.93
Fayette †	80	27	50.7	3.78
Forest City	78	12	48.2	4.52
Fort Madison [*†1]	90	32	56.0	1.98
Galva †	84	19	50.5	3.09
Glenwood †	92	26	56.2	3.05
Grand Meadow [*1]	76	30	49.6	4.36
Greenfield †	93	24	53.3	2.73
Grinnell †	85	30	52.6	2.51
Grundy Center	82	25	50.0	3.31
Hampton	79	24	49.2	6.98
Hawkeye	.....	.....	.....	2.89
Hopeville †	87	25	53.1	1.60
Hopkinton [*5]	84	33	52.0	2.70
Humboldt †	.....	.....	.....	6.24
Independence †	81	25	49.9	2.44
Indianola †	88	26	53.9	1.79
Iowa City †	86	27	52.6	2.72
Iowa Falls †	80	21	48.1	4.33
Keosauqua †	87	25	53.8	6.04
Larrabee †	82	19	50.8	4.30
Le Claire †	.....	.....	.....	1.23
Logan †	91	22	54.3	1.88
Mason City † [b]	79	28	52.6	5.15
Maxon [*1]	90	25	52.8	1.60
Mechanicsville	85	26	51.0	1.92
Monticello [*†1]	87	25	50.5	3.46

Meteorological record of voluntary observers, &c.—Continued.

Stations.	Temperature. (Fahrenheit.) Max.	Min.	Mean	Precip'n.
Iowa—Cont'd.	°	°	°	*Ins.*
Mount Pleasant *[2]	83	.....	53·5	3·31
Mount Vernon *[1]	83	30	52·8	3·00
Murray †	.....	.....	.....	1·14
Newton	86	25	52·3	2·41
North McGregor †	.....	.....	.....	4·08
Osage *† [2]	.....	31	47·0	3·20
Oskaloosa †	89	25	53·7	2·03
Ottumwa	88	27	53·9	2·00
Ovid †	88	24	53·4	1·23
Panama †	89	25	52·3	4·48
Richland *[1]	89	33	51·8	3·20
Rock Rapids	84	21	49·9	5·83
Rockwell City	.....	.....	.....	3·77
Sac City †	78	32	47·9	4·80
Seymour †	90	25	53·9	0·55
Sibley	81	18	48·1	4·13
Spirit Lake †	85	20	50·3	4·08
Sutherland	79[0]	21	48·3[d]	4·33
Vinton *[1]	78	29	51·4	2·21
Washington †	90	26	53·6	1·95
Webster City *[1]	86	30	51·2	4·85
West Bend *† [1]	79[d]	20	48·3[e]	3·17
Williams *[1]	80	24	48·6	4·51
Winterset †	92	25	53·5	1·83
Kansas.				
Abilene †	92	27	61·2	2·36
Achilles *† [2]	92	23	50·4	0·85
Allison *† [2]	90	21	53·0	1·16
Altoona *† [2]	85	37	58·4	3·15
Atchison †	88	30	57·2	2·43
Beloit †	81	30	56·8	2·91
Burlington †	90	28	58·4	3·61
Colby †	86	22	53·2	0·77
Coldwater †	89	25	58·6	3·10
Collyer *[2]	92	34	52·7	1·38
Columbus †	87	31	58·6	2·40
Coolidge †	84	23	53·4	0·90
Cunningham †	89	26	59·8	3·83
Downs	.....	.....	.....	3·90
Eldorado †	90	29	59·5	1·32
Elk City *[1]	85	36	60.0	4·92
Ellis *[2]	86	30	57·8	.....
Emporia †	85	30	59·2	2·30
Englewood †	90	17	60.0	2·66
Eureka Ranch †	91	25	56·5	1·33
Fort Riley †	86	30	56·0	2·50
Garden City †	87	24	55·8	0·93
Garfield	.....	.....	.....	2·56
Gibson *[1]	85	22	53·0	0·67
Gove *† [1]	90	26	55·8	0·72
Grainfield *[6]	84	.....	59·4	1·60
Grenola *[1]	88	32	60·5	4·90
Grinnell *[2]	90	30	60.2	0·45
Halstead *	80	24	56.6	2.86
Hays City †	90	23	58.0	1.85
Horton †	88	27	56.6	1.80
Hutchinson †	86	29	59·4	3·49
Independence †	88	33	61.2	4·98
Ionia †	91	15	56.2	2.30
Jaqua †	87	11	53·3	0·40
Johnson †	88	34	56.0	1·15
Kiowa †	88	30	60.6	3.61
Lakin †	91	20	57·8	0·13
Lebo †	88	27	59·2	2·84
Leoti †	88	21	54·2	0·79
Liberal †	92	28	59·7	1·20
Macksville †	91	23	58·9	3·46
McPherson †	87	28	59·2	3·06
Manhattan b	92	25	59·2	1·33
Manhattan c *[1]	92	26	55·5	1·21
Marion †	87	25	58.1	2.46
Marmaton	.....	.....	.....	3·75
Medicine Lodge	.....	.....	.....	3·51
Minneapolis †	89	25	58.0	3·38
Monument *[1]	88	35	54·5	1·00
Morland †	92	10	53.8	1.61
Morton †	90	24	57·2	1·25
Mount Hope *[1]	87	37	60.8	3·55
Ness City †	.....	.....	.....	1·39
New Eng. Ranch †	87	22	54.6	0·89
Oberlin †	.....	.....	.....	2.32
Olathe †	87	29	58.0	3.36
Oswego †	90	27	58.6	2.27
Phillipsburg †	88	24	51·3	1·76
Pleasant Dale †	87	22	56·7	3·04
Rome *† [1]	85	33	59·9	4·23
Sedan †	86	36	61.0	3.62
Sterling †	89	26	59·5	2.55
Tribune †	86	22	53·4	0.99
Ulysses †	91	20	57·7	1·37
Wa Keeney *[1]	88	32	54·7	2·50
Wakefield *[1]	92	36	60.6	2.28
Wallace a †	.....	.....	.....	0.69
Wamego *[1]	92	32	57·8	1·69
Washington †	90	26	57.2	1.85
Wellington	85	36	64.4	3.94
Winfield *[5]	80	26	56.5	3.67
Winona *[2]	88	26	50·8	1·25
Yates Center †	88	.....	.....	2.90
Kentucky.				
Alpha *† [1]	92	34	60·8	1·74
Blandville *[1]	87	32	58.2	3·44
Bowling Green a *[1]	87	26	54·2	3·28
Bowling Green b †	92	33	58.6	3·59
Burnside †	.....	.....	.....	3·33

Stations.	Temperature. (Fahrenheit.) Max.	Min.	Mean	Precip'n.
Kentucky—Cont'd.	°	°	°	*Ins.*
Caddo *† [1]	84	28	56.8	1.56
Canton *† [1]	88	36	59·0	3·75
Carrollton *† [1]	91	34	56·9	2.93
Catlettsburg *† [5]	84	36	55·3	2.72
Earlington	89	34	58·0	7.21
Eddyville †	.....	.....	.....	4.65
Edmonton †	87	31	56·0	3·33
Elizabethtown †	90	28	56·3	4·34
Eubank †	90	27	55·6	3.62
Falmouth †	.....	.....	.....	3.20
Fords Ferry †	94	30	57·9	4.09
Franklin *† [1]	91	41	57·8	4.10
Georgetown	86	29	53·3	.....
Greendale *[1]	85	34	54·4	3.12
Greensburg *† [1]	87	31	55·3	2.71
Harrodsburg †	92	30	55·0	4·05
Hendersonf	92	35	59·6	5.16
Hendricks †	.....	.....	.....	2.60
Louisa †	.....	27	.....	3·37
Mount Sterling †	85	29	53·2	3·24
Munfordville *† [1]	86	33	58·6	3·70
Paducah a †	.....	.....	.....	3·70
Paducah b †	92	36	60.0	3·82
Pellville †	90	30	56·8	3·53
Princeton †	92	29	55·7	4·64
Richmond †	86	32	55·8	3.60
Russellville †	91	30	58.1	4.96
Sandy Hook †	86	23	53·2	2·93
Shelby City *† [2]	88	37	53·4	2.15
Shelbyville †	92	29	55·2	3·93
South Fork † [2]	.....	.....	52·9	3·08
Springfield † [7]	81	30	52.1	3·12
Williamsburg †	.....	.....	.....	2.77
Louisiana.				
Abbeville	90	49	72.8	2.56
Alexandria †	.....	.....	.....	3·56
Amite †	88	41	68.8	3·48
Bastrop †	87	40	66.8	0·78
Baton Rouge †	88	51	70·0	3·92
Calhoun †	85	40	64·2	5·63
Cameron *† [6]	.....	58	69·7	1·52
Cheneyville †	.....	45	.....	2.95
Clinton †	86	55	73·2	3·73
Coushatta a †	.....	.....	.....	4·70
Coushatta b †	87	42	68.8	4·00
Covington †	88	54	72·3	3.67
Davis	87	41	65.8	4·90
Delhi †	.....	.....	.....	9·55
Donaldsonville †	89	50	72·4	3·52
Emilie †	86	50	70·4	3.68
Farmerville	85	43	65.6	5·99
Franklin †	88	48	73·0	3.10
Girard †	89	33	65·5	7·33
Grand Coteau	86	53	72.0	5.02
Hammond †	89	48	70.2	4·78
Houma †	89	54	74·9	3·50
Jeanerette †	88	49	71·8	2.18
Lafayette †	92	48	72·9	3·51
Lake Charles †	.....	.....	.....	2.53
Lake Providence †	88	42	67.1	5.52
Lawrence †	88[d]	42[d]	69.0[d]	8.85
Liberty Hill	91	41	68.2	4.24
Maurepas	92	44	70·9	4·64
Melville †	88	50	76·4	4.21
Minden †	87	42	67.8	4.12
Monroe †	87	45	68.6	6.50
Natchitoches †	89	40	68.3	4·04
New Iberia [8]	86	53	71·4	2.55
Opelousas †	88[1]	48	73·2[1]	5·30
Oxford †	87	39	67.0	2.84
Paincourtville †	89	45	71.2	2.88
Plain Dealing	85	39	65·4	5.28
Plaquemine	86	49	69.0	3·39
Rayne †	86	49	73.0	2.87
Roseland	87	45	70·5	2.82
Schriever †	93	47	73·2	1·74
Shell Beach	87	54	72·3	3·69
Sugar Ex. Station †	88	51	70·5	4·52
Sugartown †	85	39	65·4	5·76
Thibodeaux	.....	.....	.....	2·91
Wallace	88	50	70·9	1·34
West End	.....	.....	.....	2.21
Winnfield †	86	43	68.0	5·52
Maine.				
Bar Harbor	74	16	42.0	1.59
Belfast *[6]	69	24	43.5	1.63
Calais †	69	12	39·9	1·32
Cornish *[1]	74	18	44·4	3·12
Fairfield	76	14	44.0	0·72
Farmington †	84	15	44.8	1.43
Fort Kent †	69	1	38.0	1.20
Gardiner	79	15	44.3	1.86
Houlton †	78	5	40.2	0.72
Lewiston	78	19	44.1	2.44
Madison *[1]	74	20	44.0	1.45
Mattawamkeag *[2]	74	22	42.0	.....
Mayfield	75	8	41.0	1.17
North Bridgeton	73	18	42.8	1.88
Orono †	77	12	41·9	1.18
Petit Menan *[1]	52	20	38.3	.....
West Jonesport *[1]	60	13	38.4	.....
Maryland.				
Bachmans Val. *[1]	80	28	48.8	.....
Benedict †	84	31	54·2	3.21
Boettcherville *[1]	82	20	51·5	2.90

Meteorological record of voluntary observers, &c.—Continued.

Stations.	Temperature. (Fahrenheit.) Max.	Min.	Mean	Precip'n.
Maryland—Cont'd.	°	°	°	*Ins.*
Charlotte Hall †	84	26	52·2	3.10
Cherryfield [2]	.....	.....	51·8	3.16
College Park	82	24	51·9	3.16
Cumberland a †	80	28	51.0	2.41
Cumberland b	82	25	54·8	1·59
Darlington †	78	30	50·2	3.67
Easton †	80	30	55·1	3·96
Fallston *[1]	76	26	50·2	5.31
Fenby *[1]	76	26	50·0	4·50
Frederick	81	31	52·8	3.39
Great Falls *[5]	80	28	53·0	2.51
McDonogh	76	26	50·4	.....
Mardela Springs †	77	26	50·9	3·74
Mt. St. Marys Col †	77	22	51·3	3·37
New Market *[1]	83	30	46·5	2.30
Oakland †	73	15	43·9	5·79
Pocomoke City	81	29	55·2	3·22
Solomons †	80	32	53·0	3·14
Sunnyside	78	9	43·5	5·38
Taneytown †	.....	.....	.....	3·85
Upper Marlboro †	83	28	52·7	3·45
Woodstock	78	30	51·2	5·57
Massachusetts.				
Adams	79	18	47·5	.....
Amherst	77	15	46.8	1·58
Amherst Ex. St'n a	77	14	45·6	1·60
Amherst Ex. St'n b	79	16	46·7	1.83
Andover	77	17	46·8	1·96
Ashland	.....	.....	.....	3·55
Bedford	79	16	46·0	2.41
Beverly Farms	75	17	43·7	3.62
Blue Hill (sum't)	76	16	44·6	3.24
Blue Hill (valley)	79	15	45·2	2.84
Boston	.....	.....	.....	2·78
Brockton a	77	20	46·9	2.45
Brockton b	.....	.....	.....	3.29
Brockton c	.....	.....	.....	2·92
Cambridge a	80	19	47·5	2.67
Cambridge b	77	22	46.0	2·94
Chestnut Hill	80	18	47·4	3.24
Clinton	.....	.....	.....	2.40
Concord †	78	15	45·6	2.10
Dudley	80	15	45·2	2·73
East Templeton *[1]	75	23	44·2	2.83
Egg Rock, Nahant	71	22	42·4	.....
Fall River *[1]	73	21	44·3	3·79
Fiskdale	.....	.....	.....	2.63
Fitchburg a *[1]	74	22	45·6	2.75
Fitchburg b	78	15	46·4	3·31
Framingham	79	16	45·8	3·28
Gilbertville	75	14	44·8	3·77
Groton a	76	14	45·2	3·35
Hingham	.....	.....	.....	2.60
Hyannis	66	25	46·3	5.05
Kendall Green	74	18	45·8	5·51
Lake Cochituate	81	11	45·8	3·27
Lawrence	77	17	46·7	2.02
Leeds	78	13	46.0	1.96
Leicester	74	17	44·2	1.62
Leominster *[4]	76	18	44·6	2·98
Long Plain *[4]	78	20	42·2	4·54
Lowell a	76	18	46.2	3·76
Lowell b	79	16	46.0	.....
Lowell c	82	18	47·6	.....
Ludlow Center	75	9	43·4	2.00
Lynn b	78	29	46·4	.....
Mansfield *[1]	75	17	44·6	3.62
Middleboro	75	14	44·8	3.40
Milton *[1]	72	29	46.0	3.20
Monroe	70	11	41·6	2.60
Monson	81	12	47.6	2.57
Mount Nonotuck	.....	.....	.....	1.85
Mystic Lake	.....	.....	.....	3.48
Mystic Station	.....	.....	.....	2.64
New Bedford a	70	18	45·0	4·99
New Bedford b	71	19	44·5	5.11
Newburyport	.....	.....	.....	0.80
North Billerica	78	20	46.6	2.45
Pittsfield	72	16	44·3	1·76
Plymouth *[1]	79	26	47·4	3·97
Provincetown	69	24	43·8	3·22
Randolph	.....	.....	.....	3.40
Roberts Dam	.....	.....	.....	3.20
Roxbury	78	22	46·9	3·25
Royalston *[1]	72	20	44·9	.....
Salem	.....	.....	.....	2.69
Salisbury	.....	.....	.....	2·37
Somerset	80	17	47·9	3.23
South Dennis	70	23	43·5	4.81
Springfield Arm'ry	78	24	48·4	1·93
Taunton b	78	19	46·4	3·70
Taunton c	75	15	45·7	4.20
Taunton d	76	18	45·4	3·44
Wakefield †	80	17	48.6	3·11
Waltham	.....	.....	.....	3.29
Webster	.....	.....	.....	2·77
Wellesley	78[d]	14[d]	45·4[d]	3·89
Westboro †	80	25	47·4	3.48
Williamstown	77	22	46·5	1.82
Winchendon	.....	.....	.....	2.88
Winchester	.....	.....	.....	2·60
Winthrop	78	21	45·7	3.30
Worcester a	73	27	46·0	2·04
Worcester b	75	18	46·3	3.60

Stations.	Temperature. (Fahrenheit.) Max.	Min.	Mean	Precip'n.
Michigan.	°	°	°	*Ins.*
Adrian	85	24	48.2	3·36
Albion	79	23	49·1	3·05
Allegan	86	23	48.8	2.27
Alma	78	17	46·0	2·67
Ann Arbor	78	22	46·2	2·78
Arbela [2]	.....	.....	42.8	2·90
Ball Mountain	75	19	46.2	2.06
Bear Lake	77	15	45·0	1·95
Bellaire	79	12	44·4	1.02
Benton Harbor	87	26	48.2	2.50
Berlin *[1]	78	18	44.2	2.18
Berrien Springs a *[1]	86	29	50.9	3·53
Berrien Springs b	.....	.....	.....	2·59
Birmingham	80	21	47·4	3·03
Bois Blanc *[10]	64	20	41.2	.....
Boon	84	11	43.6	2.77
Bronson	84	24	49·1	3·09
Brown City	79	19	45·9	1·33
Calumet	70	15	39·0	2.81
Charlevoix	82	18	45.6	0·35
Cheboygan	84	17	42·4	1.46
Climax *[1]	81	28	48.0	1.40
Clinton	88	24	48.0	2.26
Crisps *[10]	80	17	41.2	.....
Crystal Falls	79	19	43.0	.....
Evart	83	12	45.6	1.86
Fairview	79	20	46.8	2·13
Fitchburg	83	20	46·3	3·74
Flint	79	17	45·2	1·77
Frankfort *[10]	70	30	46·4	.....
Grande Pointe au Sable *[10]	70	28	41.7	.....
Grand Rapids	87	22	50.2	2.16
Grape	79	22	48.0	3.21
Grayling	85	10	43·2	1·17
Grindstone City *[10]	71	24	42.2	.....
Hammonds Bay *[10]	82	20	41.0	.....
Hanover	77	23	47·8	3·05
Harbor Springs	80	11	44·3	1·44
Harrison	82	13	46.0	2.71
Harrisville	61	15	40·4	2·24
Hart	67	18	45.1	2.00
Hastings	80	23	48.2	2.27
Hayes	80	22	44·5	1.60
Highland Station	80[d]	20[d]	47·4[d]	2.52
Holland *[10]	80	29	47.0	.....
Howell	81	19	47.0	2.25
Jeddo	78	21	44·8	1·49
Kalamazoo	81	27	49.0	2.35
Lansing	80	21	46.8	3.31
Lathrop *[1]	82	16[e]	42.0[e]	1·55
Lewiston	83	13	46.0	1·72
Lodi	85	14	45·2	1.63
Ludington *[10]	74	30	42.8	.....
Madison	81	25	47·9	2·77
Manistee *[10]	70	20	45.8	.....
Mayville	76	12	45.2	3·14
Mio	87	15	44·5	.....
Mottville	87	23	49·7	2·77
Muskallonge L. *[10]	75	15	40·3	.....
Muskegon *[10]	75	30	46.2	.....
N. Manitou Isl'd *[10]	73	25	43.4	.....
North Marshall	78	21	45·8	2.41
Northport	81	20	44.2	1.78
Old Mission	84	18	45·7	1.63
Ottawa Point *[10]	68	19	41.1	.....
Ovid	81	19	45·9	2.61
Paris	89	14	45·2	1.96
Parkville	.....	.....	.....	3·95
Pte aux Barques *[10]	78	20	43.8	.....
Point Betsey *[10]	68	22	44.8	.....
Rawsonville *[1]	84	22	48.6	3.27
Rockland	82[d]	10[d]	45.2[d]	2.50
St. Ignace	69	15	41.2	1.12
St. Johns	81	20	47·7	.....
Sand Beach	75	21	43.0	1.82
Stanton	82	17	46.8	1.52
Sturgeon Point *[10]	60	20	42.4	.....
Thornville	80	22	48.0	2.20
Thunder Bay I'd *[10]	59	22	40.1	.....
Two Heart River *[10]	76	8	39.2	.....
Vandalia	84	26	49·9	2.07
Vermillion Pt. *[10]	72	14	40.4	.....
Williamston *[1]	76	26	49·9	3.25
Ypsilanti	80	18	45.6	3·25
Minnesota.				
Ada †	80	19	44·8	2.86
Airlie †	81	18	48.2	2.01
Albert Lea †	75	24	47·6	5·33
Alexandria a †	.....	.....	.....	4·58
Alexandria b	72	18	43.6	.....
Beardsley †	79	23	45·7	3·57
Belle Plaine *[1]	74	36	48.4	.....
Bingham Lake †	85	20	49.4	4·05
Bird Island	78	22	47·0	4·59
Blooming Prairie *[1]	76	25	47·2	3·27
Bonniwells Mills †	79	24	48.7	4.62
Caledonia †	78	26	49·2	4·59
Cambridge †	75	22	47·2	5·73
Camden †	82	20	47·1	3·96
Campbell	79	22	46.2	3.16
Carver † [2]	.....	.....	.....	3·45
Clear Lake †	79	22	45·8	5·81
Clearwater *[1]	74	28	45·7	4.62
Collegeville	79	21	48.4	3·43

Meteorological record of voluntary observers, &c.—Continued

Stations.	Temperature. (Fahrenheit.) Max.	Min.	Mean	Precip'n.
Minnesota—Cont'd.	°	°	°	*Ins.*
Cromwell *[1]	75	22	41.2	7.86
Crookston *a* †	78	20	43.4	4.06
Dassel *[1]	72	32	47.3	.....
Dawson *[1]	82[c]	26	47.3[c]	.....
Excel *[6]	80	16	41.6	.....
Farmington †	80	24	47.2	4.09
Fergus Falls †	76	21	44.5	4.13
Fort Ripley †	.....	.....	.....	5.44
Grand Meadow †	79	24	47.3	3.27
Granite Falls	81	19	47.7	4.11
Hutchinson *[1]	74	22	47.4	5.40
Jadis †[d]	76	23	43.6	3.46
Lake Vermillion †	72	13	42.2	5.31
L Winnibigoshish *[1]	75	17	42.2	3.92
Leech Lake *[1]	78	15	42.2	4.00
Long Prairie †	74	16	44.2	7.66
Luverne †	78	21	48.0	3.64
Maple Plain	75	23	47.8	4.61
Marfield †	76[c]	13[c]	41.6[c]	4.75
Mazeppa [1]	78[a]	20	46.7	.....
Medford †	78	23	47.8	4.38
Milan †	78	24	46.7	4.62
Minneapolis *a* †	79	24	49.0	4.53
Minneapolis *b* [1]	75[a]	25	47.8	4.99
Minnesota City *† [1]	83	28	50.0	3.48
Montevideo †	81	24	47.2	4.48
Morris	76	27	46.6	3.91
New London	73	20	47.0	6.48
New Richland *[1] *a*	74	30	48.0	.....
New Ulm	78	30	50.2	.....
Ortonville †	.....	.....	.....	3.39
Park Rapids †	74	14	43.2	4.45
Perham †	78	18	43.1	.....
Pine River *[1]	71	18	42.9	4.93
Pokegama Falls [1]	76[a]	10	40.9	4.35
Red Lake † [1]	76	19	44.4	2.62
Red Wing †	.....	.....	.....	3.30
Redwood Falls †	.....	.....	.....	2.61
Rolling Green †	75	25	48.0	4.58
Rush City †	74	22	45.7	4.76
St. Charles †	77	22	48.4	3.67
St. Cloud	74	26	46.6	4.93
St. Olaf	76	20	44.7	4.09
St. Peter †	77	27	49.0	5.42
Sandy Lake Dam *[1]	69	27	41.4	5.59
Sauk Center	73	18	43.8	5.74
Starbuck	75	22	43.8	5.56
Sunrise City *[6]	76	24	47.0	.....
Two Harbors †	64	17	41.2	6.71
Wabasha *[1]	80	27	50.2	4.39
Willmar †	74	22	46.6	5.89
Winona	80	26	50.2	4.57
Worthington	78	19	46.8	4.83
Mississippi.				
Aberdeen †	.....	.....	.....	4.05
Agricult'ral Col'ge	88	42	65.4	3.13
Batesville †	87	38	62.5	3.22
Bay St. Louis †	83	52	69.6	4.00
Biloxi †	87	47	69.4	1.95
Briers	88	47	69.7	2.00
Brookhaven †	91	42	66.8	5.71
Canton †	84	46	65.8	5.57
Clarksdale † [j]	94	35	66.3	3.77
Columbus *a* †	.....	.....	.....	4.05
Crystal Springs †	88	46	66.6	6.32
Duck Hill †	89	39	64.2	4.01
Edwards	90	46	67.4	5.67
Egypt *[1]	90	41	65.0	.....
Enterprise †	90	38	66.7	4.11
Fayette †	88	49	69.2	5.81
French Camp †	85	35	60.3	4.47
Greenville *a*	86	43	64.8	4.08
Greenville *b* †	90	41	66.8	4.48
Hattiesburg † [f]	90	46	67.4	2.55
Hernando †	86	40	63.2	6.66
Itta Bena *† [1]	92[i]	46[d]	69.0[i]	3.63
Jackson †	91	43	68.4	3.45
Kosciusko †	89	40	62.4	1.79
Lake †	86	41	65.9	3.27
Leakesville †	89	41	69.0	2.01
Logtown †	84	47	69.6	4.56
Louisville †	89	38	63.4	3.49
McComb †	89	49	68.4	2.79
Macon †	92	39	65.4	4.83
Mayersville	88	41	67.2	7.04
Moss Point †	85	54	71.2	.....
Natchez †	88	45	69.7	3.51
Okolona †	.....	.....	.....	3.55
Palo Alto †	88	42	64.6	3.24
Pontotoc †	89	42	64.6	3.03
Port Gibson †	89	43	68.5	7.21
Stonington *[1]	87	50	69.9	.....
Thornton *† [c]	86	48	69.0	6.43
Topton *[3]	88	48	64.5	3.55
Vaiden †	95	37	65.9	4.50
Water Valley *[1]	96	39	64.4	3.30
Waynesboro †	95	35	65.2	2.36
Woodville †	91	47	70.8	2.07
Yazoo City †	98	41	69.7	5.47
Missouri.				
Appleton City †	90	32	58.6	3.29
Arlington †	.....	.....	.....	3.27
Arthur *[3]	.....	32	48.7	3.63
Bagnell †	.....	.....	.....	4.10
Bethany	89	27	55.3	1.79
Big Piney	.....	.....	.....	3.32
Birch Tree	88	28	58.1	4.64
Bluffton *[1]	92	34	59.0	2.44
Boonville †	.....	.....	.....	3.97
Brunswick	89	30	57.1	1.60
Carrollton †	87	31	59.6	1.70
Conception	78	28	49.4	3.70
Cowgill	.....	.....	.....	1.44
Dixon [g]	78	34	54.0	5.85
Downing	.....	.....	.....	2.95
Edge Hill *[5]	80	36	57.6	3.47
Eight Mile *[1]	82	34	56.1	5.04
Eldon *[1]	88	32	55.6	5.07
Elmira	89	26	57.3	1.75
Emma *[3]	.....	38	58.0	1.90
Fairport	.....	.....	.....	2.01
Farmersville	.....	.....	.....	1.81
Fayette	90	29	57.4	2.34
Fox Creek *[1]	86	32	57.9	4.12
Fulton	.....	.....	.....	2.77
Gallatin *[1]	92	31	55.8	1.32
Gayoso *[3]	.....	36	55.2	4.49
Glasgow	90	30	57.0	1.80
Gordonville *† [3]	.....	32	55.1	2.54
Gorin *[3]	89	34	52.7	3.54
Grove Dale	90	23	55.0	4.81
Half Way	.....	.....	.....	4.10
Harrisonville †	95	31	59.4	4.46
Hastain	89	31	57.8	3.59
Hermann †	.....	.....	.....	3.69
Houston	85	23	55.4	6.57
Ironton *[1]	86	33	56.4	4.27
Kidder	90	26	55.4	2.16
Lamar †	87	32	58.9	3.48
Lamonte †	.....	.....	.....	2.69
La Plata *[1]	83	34	55.2	2.33
Lebanon	86	34	58.6	5.13
Lexington †	89	31	57.2	2.37
Liberty	90	33	60.0	3.15
Louisiana Bridge †	.....	.....	.....	2.17
McCune *[1]	87	34	53.8	4.59
Marble Hill *[3]	88	27	54.6	1.97
Marceline	.....	.....	.....	1.51
Marshall †	89	28	55.9	2.33
Mexico †	91	29	55.5	2.38
Mine La Motte †	87	28	56.7	3.12
Mount Vernon	90	30	58.6	2.73
Nevada	.....	.....	.....	2.57
New Hartford *[1]	87	30	56.2	3.54
New Haven *[1]	93	32	57.2	4.42
New Madrid	90	37	60.6	3.51
New Palestine	.....	.....	.....	3.14
Oakfield †	.....	32	57.1	4.68
Oak Ridge *[4]	.....	24	56.6	2.50
Olden †	88	33	58.4	3.15
Oregon *a*	89	30	57.9	1.33
Oregon *b* †	88	28	56.6	1.31
Osceola	.....	.....	.....	2.69
Oto	.....	.....	.....	2.66
Palmyra	.....	.....	.....	2.75
Panacea	89	26	58.2	2.94
Phillipsburg *† [1]	86	38	57.4	6.84
Pickering *[2]	.....	24	51.6	0.90
Platte River *[3]	86	28	53.0	2.28
Poplar Bluff	87	31	59.4	3.65
Potosi	87	22	53.2	2.82
Princeton *[1]	89	28	56.0	1.91
Rea *[1]	90	26	51.1	1.07
Round Spring	.....	.....	.....	4.42
St. Charles	86	31	55.6	4.57
St. Joseph †	.....	.....	.....	4.91
St. Louis	87	28	55.6	2.44
Sarcoxie *[3]	.....	38	59.4	2.30
Sedalia	90	31	57.5	3.43
Shelbina	.....	.....	.....	1.80
Steffenville	.....	.....	.....	2.31
Stellada †	89	30	56.7	2.87
Sublett	89	30	54.2	1.37
Unionville	87	28	54.6	1.56
Vermont *† [1]	90	30	54.8	3.23
Vilas	.....	.....	.....	1.99
Virgil City	.....	.....	.....	3.92
Warrensburg *[1]	88	36	57.3	3.18
Warrenton	89	32	56.9	3.08
Wheatland	.....	.....	.....	4.41
Whiteside	86	30	55.0	4.00
Montana.				
Anaconda †	.....	.....	.....	0.50
Big Timber † [g]	82	21	49.8	1.49
Billings †	83	22	53.4	1.96
Boulder †	72	13	42.3	0.74
Bozeman †	65	21	42.1	3.07
Butte †	66	17	38.3	0.93
Cascade †	.....	.....	.....	0.69
Deer Lodge City †	80	18	43.6	1.18
Fort Custer †	79	29	47.8	1.52
Fort Keogh	75	25	48.7	1.00
Fort Logan †	70	4	39.2	1.55
Fort Missoula	75	22	42.9	0.61
Glasgow †	83	12	47.4	.....
Glendive †	86	26	49.6	2.30
Great Falls †	74	15	46.6	0.76
Martinsdale †	69	14	44.5	1.36
Marysville †	70	18	42.0	1.46
Mingusville †	80	25	49.4	3.19
Musselshell †	83	24	47.6	.....
Pony †	69	18	42.2	2.84
Radersburg †	.....	.....	.....	0.31
Red Lodge †	67	15	38.2	.....
Virginia City †	70	16	41.3	1.94
White Sul. Spgs. †	69[b]	10[b]	42.6[b]	3.23
Nebraska.				
Agee *[1]	86	26	49.7	2.03
Ansley †	94	20	57.0	1.38
Arborville *[1]	98	20	51.8	1.13
Ashland †	92	24	55.4	2.01
Ashton *[1]	92	18	50.9	1.35
Bassett	90	19	51.6	1.80
Beatrice †	92	25	55.5	1.31
Beaver City	92	20	55.2	0.72
Bratton *[1]	90	30	56.3	1.61
Burwell *[1]	76	38	54.4	2.57
Callaway †	90	20	52.2	0.81
Columbus † *	87	20	50.4	1.08
Cornlea	.....	.....	.....	3.19
Creighton *† [1]	87	19	49.2	4.34
Crete	91	25	55.3	1.40
Culbertson	.....	.....	.....	1.09
Curtis *† [5]	93	28	56.4	1.55
David City *† [3]	87	26	50.3	1.85
Ericson *† [1]	90	30	55.8	1 24
Ewing †	.....	.....	.....	2.67
Fairbury *[b]	86[c]	30[c]	57.2[c]	1.97
Fort Robinson	83	17	50.2	2.86
Franklin †	92	21	55.5	0.81
Geneva †	93	25	54.4	1.98
Genoa †	92	25	52.8	1.93
Gering †	82	22	50.4	1.68
Glenwood *[3]	83	26	45.8	1.49
Haigler *[1]	88	30	54.5	T.
Hartington †	86	20	49.7	4.26
Harvard *[1]	95	30	54.8	1.20
Hebron †	94	23	56.8	1.46
Holdrege *[3]	.....	27	52.2	2.07
Indianola *[5]	90	21	54.2	0.36
Kennedy *† [1]	86	26	48.7	2.37
Kimball †	85	15	48.8	2.22
Lexington †	85	20	55.9	0.81
Lincoln	90	28	54.2	1.38
Lynch *† [1]	83	19	49.8	2.58
Madrid *† [5]	89	18	49.7	2.51
Marquette *	95	28	.....	2.21
Minden *[4]	91	25	53.0	1.41
Mullen *† [1]	86	20	50.5	1.67
Nebraska City *† [1]	81	25	50.4	1.55
Norfolk †	81	22	51.8	2.59
North Loup *† [1]	91	17	54.4	1.24
Oakdale †	90	19	51.0	2.57
Ogallala †	88	.....	.....	0.83
O'Neill *[1]	84	26	50.8	2.14
Plattsmouth †	.....	.....	.....	1.74
Ravenna	92	20	54.0	1.97
Red Cloud	.....	.....	.....	1.04
Santee Agency †	89	23	52.1	4.21
Seward *[3]	92	28	55.0	0.97
Springview	88	21	50.1	2.22
Stanton *[1]	82	21	50.2	3.85
State Farm	95	23	55.8	.....
Superior *[5]	88	32	58.8	3.69
Sutton	85	25	54.6	1.65
Table Rock *† [1]	96	27	56.1	1.52
Tecumseh †	84	27	55.4	1.43
Turlington †	96	25	54.8	1.35
Wallace *[1]	90	20	51.2	2.20
Weeping Water *[1]	96	20	51.8	1.97
West Point †	93	20	52.6	3.10
Whitman *[1]	80	20	41.4	3.62
Wilcox	.....	.....	.....	1.81
York *[1]	92	31	53.7	2.13
Nevada.				
Austin	71	16	43.3	1.82
Battle Mountain *[1]	75	32	53.2	0.40
Belleville *[3]	86	30	50.4	0.45
Belmont	70	16	43.1	0.72
Beowawe *[8]	80	28	49.2	0.80
Candelaria	80	21	50.0	0.61
Carlin *[8]	75	27	42.4	0.70
Carson City	72	19	48.8	0.27
Cranes Ranch	.....	.....	.....	0.86
Downeyville	90	22	56.1	0.25
Edgewood	69	15	41.6	0.40
Elko *[8]	78	30	46.3	0.15
Ely	70	16	42.4	0.70
Empire Ranch	80	15	48.0	1.14
Eureka	.....	.....	.....	0.37
Fenelon *[8]	70	30	43.4	0.05
Genoa	76	22	48.6	T.
Golconda *[1]	86	28	50.8	0.54
Gold Hill	78	17	49.4	0.44
Halleck *[1]	78	27	43.6	0.80
Hawthorne *a* [8]	80	31	51.4	0.08
Hawthorne *b*	84	26	49.9	0.08
Hot Springs *[1]	82	38	57.2	0.15
Humboldt *[8]	85	25	50.2	0.15
Lewers Ranch	73	20	48.4	0.56
Lovelock *[8]	92	31	56.4	0.00
McGill	71	18	43.0	1.31
Mill City *[1]	76	30	48.2	.....
Osceola	.....	.....	.....	0.88
Palisade *[1]	72	28	45.7	0.89
Palmetto	76	18	45.6	0.55
Paradise	80	15	47.6	0.79
Reno *[8]	76	34	50.5	0.10
Reno State Univ'ty.	75	.....	.....	0.10
Saint Clair	81	19	50.2	0.22
Stoñel	65	10	35.1	2.08
Sunnyside	84	15	52.4	0.00
Tecoma *[8]	72	30	46.4	0.10
Toano *[1]	68	25	42.3	T.
Tybo	75	20	48.2	0.35
Verdi *[8]	75	26	47.1	0.45
Virginia City	71	18	46.3	0.46
Wadsworth *[8]	81	31	51.5	0.20
Wells *[8]	62	30	42.0	0.25
Winnemucca *[8]	76	27	47.0	0.82
Yerington	79	22	51.2	0.04
New Hampshire.				
Alstead *[4]	71	12	42.9	0.97
Antrim	.....	.....	.....	3.52
Belmont	.....	.....	.....	1.70
Berlin	71	10	40.6	.....
Berlin Mills	73	11	41.0	1.98
Bethlehem	77	8	41.9	1.92
Brookline *[1]	78	20	46.5	2.74
Concord	73	13	45.0	1.64
Dublin	73	13	43.0	3.26
East Canterbury	73	10	43.7	1.55
Grafton	74	10	44.6	2.11
Hanover	70	19	45.2	1.71
Keene	78	10	44.7	1.68
Lakeport	.....	.....	.....	1.63
Lancaster	79	11	43.0	2.34
Littleton	74	11	44.5	2.04
Mine Falls	.....	.....	.....	2.46
Nashua	80	17	47.0	2.49
Newton	79	14	45.4	1.58
North Conway	74	12	43.6	1.10
Pennichuck St'n	.....	.....	.....	2.57
Peterboro	75	11	43.4	3.17
Plymouth	76	14	42.6	1.67
Sanbornton †	74	16	43.9	1.69
Stratford	76	8	45.2	2.41
Wiers Bridge	.....	.....	.....	1.00
West Milan	74	12	41.5	2.05
Wolfboro	.....	.....	.....	1.63
New Jersey.				
Allaire	80	18	49.0	.....
Asbury Park	79	23	48.8	3.45
Barnegat	72	22	47.0	2.43
Bayonne	79	22	49.6	2.53
Beach Haven	72	26	49.2	3.55
Belvidere	80	16	49.4	2.73
Beverly †	80	21	51.1	3.84
Billingsport *[1]	78	26	50.0	3.79
Blairstown	78	18	48.5	.....
Boonton	78	18	47.8	2.30
Bridgeton	81	27	52.8	2.14
Camden	78	23	50.8	3.38
Cape May	73	24	50.0	2.99
Cape May C. H †	80	23	50.1	2.64
Charlotteburg	76	10	43.7	2.46
Chester	74[g]	23[g]	49.6[g]	3.80
Deckertown *	76	15	47.0	4.01
Dover	78	14	47.4	3.40
Egg Harbor City	81	24	49.0	3.26
Elizabeth †	80	22	50.6	2.31
Franklin Furnace	76	15	46.6	2.80
Franklinville	81	18	49.2	3.94
Freehold	80	19	49.6	3.92
Friesburg	.....	.....	.....	2.94
Gillette	76	16	48.0	2.26
Hammonton	.....	.....	.....	4.25
Hanover	75	20	48.2	2.76
Highland Park †	76	20	49.1	2.87
Hightstown	77	23	51.3	4.86
Imlaystown	78	21	50.8	4.23
Junction	.....	.....	.....	2.70
Lambertville	77	21	50.4	2.24
Millville	77[c]	21[c]	50.0[c]	1.82
Moorestown	79	22	50.0	3.54
Newark *a*	76	23	48.6	2.23
Newark *b* †	78	24	49.2	2.62
New Brunswick *a*	79	19	50.2	3.41
New Brunswick *b*	76	21	47.2	2.37
Newton	80	16	47.4	3.06
Ocean City	78	20	48.4	3.07
Oceanic	81	31	52.6	3.91
Paterson	82	22	50.8	2.52
Pensauken	.....	.....	.....	2.29
Plainfield	78	20	49.6	3.18
Rancocas *	80	23	.....	2.86
Readington *[6]	78	26	53.5	.....
River Vale	77	15	47.7	2.61
Salem	81	28	51.3	4.05
Somerville	80	15	50.2	3.02
South Orange	76	22	48.8	2.32
Tenafly	80	16	47.6	2.89
Toms River	81	19	48.6	4.12
Trenton	78	25	52.9	2.92
Vineland	88	21	51.7	3.52
Whiting	84	20	50.6	4.03
Woodbine	80	18	48.5	2.78
New Mexico.				
Albert †	84	32	59.0	0.92
Albuquerque †	81	29	55.9	0.69

Meteorological record of voluntary observers, &c.—Continued.

Stations.	Temperature. (Fahrenheit.) Max.	Min.	Mean	Precip'n.
New Mexico—Cont'd.	°	°	°	*Ins.*
Alma	86	20	53.5	T.
Chama †	78	10	43.4	0.98
Deming *[8]	87	50	71.4	0.00
East Las Vegas †	76	25	50.5	0.54
Fort Bayard	83	31	54.6	0.00
Fort Stanton †	80	29	54.4	0.96
Fort Wingate	79	25	49.1	0.80
Galisteo †	76	31	53.4	1.10
Gallinas Spring †	86	29	57.0	0.89
Halls Peak †	73	14	45.6	0.20
La Luz †	89	30	62.0	0.01
Las Cruces †	83	30	59.9	0.02
Lordsburg *[8]	95	40	67.3	0.00
Los Lunas †	89	32	58.6	0.40
Monero †	75	11	43.5	1.35
Olio †	85	21	53.4	0.19
Raton †	78	19	50.4	0.78
Rincon †	92	32	62.9	T.
San Marcial †	85	33	59.2	0.15
Socorro †	87	34	60.3	0.25
Springer †	82	31	54.2	0.06
Sulphur Hot Sp'gs †	69	15	41.3	1.58
Taos †	82	17	49.6	0.67
New York.				
Addison	78	16	44.6	6.60
Akron				3.43
Alfred Center	76	15	41.7	8.09
Angelica †	77	12	41.8	7.77
Arcade	75	15	41.6	0.02
Arkwright	70	23	43.3	
Atlanta				5.90
Baldwinsville	75	20	45.7	2.20
Bedford	77	16	47.1	3.61
Big Sandy *[10]	72	19	45.5	
Binghamton †	74	15	44.4	3.53
Bovina Center				0.96
Brookfield	74	15	42.3	2.18
Canton †	74	12	41.4	1.59
Charlotte *[10]	70	21	42.4	
Chenango Forks				3.05
Cherry Creek				3.66
Cooperstown †	73	15	43.4	2.54
Cortland	68	19	44.0	2.75
De Kalb Junction				1.37
Demster				1.95
Eden Center	81	18	44.3	6.32
Ellis				4.78
Elmira †	78	18	46.6	4.42
Factoryville †	76	12	44.5	4.63
Fort Niagara †	78[1]	24	45.7[1]	1.53
Friendship	79	13	42.0	5.81
Gloversville	74	16	45.1	2.74
Hamilton				1.48
Hess Road St'n †	79	19	45.7	1.34
Honeymead Brook	77	15	46.2	2.86
Humphrey †	79	16	44.0	4.53
Hyndsville	76	20	45.7	2.21
Ithaca	77	16	44.3	4.84
Jamestown *[6]	75	23	46.7	
Kings Station				1.87
Lebanon Springs	75	10	44.6	1.49
Le Roy	78	17	44.4	4.96
Lockport	75	19	45.2	2.25
Lowville	74	13	43.4	2.26
Madison Barracks †	73	17	46.0	1.52
Malone	72	14	43.1	1.15
Middletown	74	19	46.9	2.97
Minnewaska	70	17	44.1	3.40
Mount Morris	81	14	44.2	4.13
Nashville	76	17	43.5	3.40
New Lisbon †	75	10	42.2	1.50
North Hammond †	76	20	47.3	1.31
Number Four †	66	7	40.9	1.89
Ogdensburg	71	15	46.7	0.94
Oxford	76	13	44.5	2.79
Palermo †	77	10	44.7	1.75
Perry City	77	11	42.3	6.10
Phœnix				1.71
Pine City				5.09
Plattsburg B'ks	70	14	44.0	1.14
Port Jervis	80	17	47.0	3.29
Potsdam	74	15	43.7	c.67
Poughkeepsie	76	10	41.7	1.32
Rome	83	15	46.3	2.39
Romulus	76	17	45.3	4.57
Rondout †	72	20	46.8	3.00
Saranac Lake	75	8	41.7	0.75
Scottsville				3.45
Setauket †	73	27	47.1	3.11
South Canisteo	78	14	42.9	7.80
South Kortright †	74	9	42.3	2.25
Stillwater	77	16	48.0	1.73
Turin	71	14	43.5	2.58
Varysburg	82	15	43.6	4.34
Wappingers Falls	78	19	47.7	2.68
Warwick				4.31
Wedgwood	78	12	43.6	6.67
West Chazy				0.65
West Point †	75			2.86
Willets Point	73	31	48.0	1.90
North Carolina.				
Asheville †	82	28	53.9	1.21
Auburn *[1]	88	35	58.9	1.26
Bailey *[1]	88	30	58.6	1.83
Bakersville †	82	22	50.9	1.88

Stations.	Temperature. (Fahrenheit.) Max.	Min.	Mean	Precip'n.
N. Carolina—Cont'd.	°	°	°	*Ins.*
Blowing Rock †	64	24	45.5	0.81
Bryson City †				3.13
Chapel Hill †	86	33	58.0	2.04
Columbus	74	32	54.8	1.24
Currituck Inlet †				2.05
Experiment'l Farm	85	34	58.3	1.75
Fair Bluff †				1.69
Falkland *[1]	87	37	60.5	1.14
Fayetteville †				1.30
Flat Rock	83	24	53.0	2.75
Forest Hill *[1]	81	33	55.8	1.10
Greenville †				0.63
Henderson †	88	32	57.2	2.68
Highlands	76	26	49.6	2.90
Horse Cove †	82	27	54.5	2.65
Lenoir *† [1]	79	32	56.1	1.99
Lewiston				1.69
Littleton †	87	30	56.2	2.48
Louisburg †	83	33	56.8	2.86
Lumberton †	86	30	62.6	1.47
Lynn *† [2]	86		56.8	1.85
Marion	85	27	54.4	1.23
Mocksville †	84	32	58.1	1.82
Moncure †				1.24
Morganton *† [1]	86	30	55.0	2.15
Mount Airy †	84	25	54.4	2.15
Mount Pleasant	86	31	59.0	1.47
Murphy †				3.10
Newbern †	84	32	56.3	0.66
Oak Ridge †	86	34	57.5	1.84
Pittsboro	83	32	56.6	1.43
Raleigh *† [1]	83	38	60.8	1.40
Rockingham †	98	35	63.6	0.90
Roxboro †	86	36	57.8	2.06
Rutherford Co[1]	82	28	52.3	2.30
Salisbury *a*	83	36	59.9	1.62
Salisbury *b* †				1.67
Saxon †	86	24	56.4	2.20
Selma	86	34	58.8	1.10
Shelby †	86	30	58.0	1.40
Sloan	86	34	61.0	0.65
Soapstone M't †	85	29	57.2	1.53
Southern Pines †	88	37	61.6	1.90
Tarboro	88	31	59.1	1.30
Washington †	89	32	59.3	1.37
Weldon †	85	32	56.1	2.79
Willeyton	86	31	56.7	1.98
North Dakota.				
Ashley	81	14	42.1	2.42
Berlin †	84	12	42.4	3.91
Bottineau	67	22	41.5	2.00
Churchs Ferry	72	19	41.4	1.63
Devils Lake	72	17	39.7	3.78
Dickinson †	75	22	44.2	2.40
Fargo †	78	18	42.3	3.35
Forman †	82	20	44.0	7.48
Fort Berthold	77	22	47.7	3.24
Fort Stevenson †	72	24	44.0	2.86
Fort Yates †	82	20	45.4	3.51
Gallatin †	84	14	41.6	3.88
Grafton †	80	20	41.1	2.28
Grand Forks †	77	19	44.8	4.38
Jamestown †	74	20	43.0	2.48
Kelso †	80	18	43.0	2.79
Lakota †	75	18	40.6	3.38
Larimore	82	19[c]	36.9[c]	2.71
Lemert †	75	18	41.0	2.86
McKinney †	72	19	42.1	1.94
Milton †	72[f]	15[g]	38.8[i]	4.30
Minto †	82	18	42.2	2.85
Napoleon †	75	20	42.5	2.98
New Salem	77	20	43.9	2.20
Oakdale †	72	22	44.2	2.35
Portal †	92	20	45.9	2.50
Power †	83	24	43.7	2.75
St. Johns †	70	18	38.3	3.11
Sheyenne †	76	22	42.9	2.70
Valley City †	82	18	43.4	3.07
Wahpeton †	78	23	44.8	3.41
Wild Rice † [2]			42.0	4.06
Williamsport	78	17	43.3	2.46
Willow City †	68	21	40.9	2.66
Woodbridge †	74	5	38.5	2.77
Ohio.				
Akron	79	24	48.8	2.82
Annapolis	83	22	48.5	2.79
Arcanum				1.60
Ashland	82	29	51.0	2.55
Athens	84	26	52.3	3.17
Auburn	77	20	45.4	3.28
Bangorville	82	22	49.2	1.84
Batavia				2.83
Bellefontaine	90	26	52.9	2.06
Bement	85	23	45.4	3.53
Benton Ridge	90	21	51.1	1.44
Bethany	84	26	51.8	2.08
Big Prairie	83	23	49.1	1.90
Binola	85	25	50.9	2.32
Bissells	83	22	48.6	2.82
Bladensburg	84	25	49.9	1.97
Bloomingburg	86	28	52.3	2.44
Bloomington				2.42
Bowling Green	85	24	49.1	1.36
Bucyrus	86	24	50.5	2.70
Caledonia †				1.99

Meteorological record of voluntary observers, &c.—Continued.

Stations.	Temperature. (Fahrenheit.) Max.	Min.	Mean	Precip'n.
Ohio—Cont'd.	°	°	°	*Ins.*
Cambridge	83	19	49.3	2.41
Camp Dennison	84	30	53.1	2.38
Canal Dover	85	18	49.1	3.07
Canton †	82	24	50.0	2.40
Cardington	84	25	49.2	1.32
Carrollton	84	20	49.4	2.27
Cedarville *[1]	82	32	55.3	1.58
Celina	86	23	53.6	1.58
Cherry Fork	89	25	52.6	2.86
Circleville †				2.52
Clarksville	82	29	52.0	2.81
Cleveland	80	25	48.2	2.03
Clifton	85	26	51.3	2.49
Coalton	86	22	51.0	2.15
Colebrook		18		2.03
Cynthiana				2.64
Dayton *a*	85	30	53.3	1.51
Dayton *b* †				1.67
Defiance	88	26	51.2	1.54
Demos	80	23	50.2	3.96
Dupont	83	26	50.5	1.65
Ellsworth	82	19	48.0	2.48
Fairport Harbor *[10]	76	20	45.3	
Findlay	85	26	49.6	1.60
Fostoria	85	26	50.8	1.25
Frankfort	84	27	51.7	2.87
Garrettsville	81	16	47.1	2.84
Georgetown	88	30	54.4	2.50
Granville	83	26	50.2	2.30
Gratiot	83	24	50.5	1.81
Greenfield	82	30	54.7	1.35
Green Hill	84	16	47.7	2.15
Greenville	81	29	50.6	1.70
Guysville	83	26	51.3	3.32
Hackney	81	25	50.3	2.79
Hanging Rock	87	28	53.2	2.64
Harbor	76	24	46.9	2.34
Hedges	91	23	51.0	1.56
Hillhouse	82	19	45.6	2.15
Hillsboro	88	25	52.7	2.60
Hiram	79	19	47.2	3.20
Jacksonboro	86	26	53.2	1.15
Kenton †	87	27	52.6	1.99
Kilbourne	82	24	48.3	1.51
Killbuck	84	20	50.6	2.16
Leipsic	85	20	50.1	1.36
Levering	82	22	48.2	2.10
Logan	86	22	53.1	2.86
Lordstown	82	17	47.5	2.81
Lowell	83	20	48.3	2.04
McArthur	84	24	51.5	3.05
McConnelsville	83	23	51.0	3.14
Mansfield †				2.58
Marietta *a* †				3.03
Marietta *b*	84	29	54.4	3.07
Marion	88	25	50.1	1.83
Milfordton	83	19	48.1	1.88
Milligan	85	20	51.0	2.45
Millport	82	32	53.3	2.25
Montpelier	84	25	49.4	2.46
Napoleon	86	26	49.9	2.02
Nelsonville	87[b]	22[i]	55.6[i]	2.85
New Alexandria	80	21	50.0	4.71
New Berlin	82	21	48.6	2.33
New Bremen	84	27	50.4	1.95
New Comerstown	83	22	49.9	2.74
New Holland	83	25	50.4	3.13
New Paris	84	34	55.1	1.42
North Lewisburg	87	26	51.6	3.05
North Royalton	83	22	47.3	2.14
Northwood	86	26	51.1	2.44
Norwalk	84	24	49.0	2.23
Oberlin	83	23	49.3	2.55
O. S. University	83	27	51.0	2.04
Orangeville	80	16	47.7	3.05
Pataskala	82	26	50.4	2.53
Peoli	84	20	51.1	1.90
Plattsburg	83	27	51.3	1.72
Pt. Marblehead *[10]	72	30	49.4	
Pomeroy	85	24	51.6	2.63
Portsmouth *a* †				2.93
Portsmouth *b*	97	29	57.3	2.91
Ridg'v'le Corners	85	25	49.3	1.34
Ripley	82	30	53.1	2.75
Rittman	80	21	47.5	2.44
Rosewood				2.08
Rush Creek				1.79
Sharon Center	83	25	50.2	2.37
Shenandoah	84	23	48.7	1.51
Sidney *a* †				2.41
Sidney *b*	86	26	50.0	2.22
Springboro				2.71
Spring Valley	90	27	55.9	1.41
Stoutsville				3.74
Sylvania	83	27	47.6	2.62
Thurman	88	25	55.0	2.52
Tiffin †	84	28	50.1	1.47
Vanceburg	85	29	54.2	2.67
Van Wert	86	25	50.1	2.03
Vermillion	83	24	48.0	1.70
Vickery	81	26	48.8	1.25
Walnut				2.51
Warren	83	19	48.4	3.06
Wauseon	85	23	49.5	3.96
Waverly	87	25	53.5	2.65

Stations.	Temperature. (Fahrenheit.) Max.	Min.	Mean	Precip'n.
Ohio—Cont'd.	°	°	°	*Ins.*
Waynesville				2.30
Wellington	85	23	49.0	1.48
Westerville	82	30	51.2	2.49
Weymouth	83	22	47.5	1.85
Wheeler † [2]			46.6	3.71
Wooster *a*	92	24	50.5	1.74
Wooster *b* †				2.45
Youngstown	82	20	48.9	2.36
Zanesville †				2.19
Oklahoma.				
Alva † [2]	89	43	63.3	4.92
Anadarko †	88	35	64.8	2.45
Arapaho †	91	37	61.9	4.87
Britton †				2.70
Buffalo †	90	32	61.4	2.95
Burnett †	86	32	63.6	4.08
Clifton †	90	30	63.4	4.78
Enid †	89	35	64.0	4.08
Fort Reno †	88	30	59.8	3.30
Fort Sill	86	40	64.2	4.09
Fort Supply †	92	28	61.1	4.36
Guthrie †	90	37	65.6	3.29
Keokuk Falls †	90	32	64.6	4.54
Mangum †	97	44	67.3	2.98
Ponca †	88	32	60.9	5.87
Pond Creek †	88	28	61.0	4.02
Stillwater †	89	31	62.6	2.81
Winnview †	88	44	66.0	6.05
Oregon.				
Albany *a* †	74	32	50.2	3.27
Albany *b* *[8]	78	40	52.4	1.23
Arlington †	80	29	51.2	1.15
Ashland *a* *[8]	76	34	47.5	0.87
Ashland *b*	79	27	49.0	0.55
Aurora *[8]	76	35	53.1	3.29
Aurora (near)	77	30	48.8	4.09
Bandon	62	30	49.0	5.69
Bay City				3.85
Beulah †	76	22	45.4	1.06
Brownsville *[8]	74	34	49.6	2.76
Burns †	70	8	39.4	0.70
Canyon City †	80	20	47.8	2.47
Cascade Locks	74	31	50.6	7.76
Comstock *[8]	80	34	50.3	3.11
Cornelius	74	30	49.8	2.56
Corvallis *a*	70	32	48.9	2.81
Corvallis *b* *[8]	70	30	47.0	2.13
Corvallis (near)	74	31	49.7	3.09
Crook	76	20	42.7	1.62
East Portland *	75	32		2.59
Eugene †				1.94
Fife †	75	12	41.5	1.03
Forest Grove	72	28	47.8	2.61
Gardiner	65	35	51.2	4.84
Glenora	76	28	46.2	9.73
Grants Pass *a* †	85	24	50.4	0.61
Grants Pass *b* *[8]	75	31	49.5	0.40
Happy Valley †	75	17	44.0	1.25
Heppner †	78	29	47.4	1.86
Hood River	79	31	50.6	1.05
Hood River (near)	71	29	46.4	1.68
Hubbard	71	31	49.2	3.79
Jacksonville	77	28	49.4	0.00
Junction City *[8]	80	38	54.9	0.42
Klamath Falls	64	22	46.2	T.
Lafayette *[8]	68	37	51.0	2.91
La Grande †	73	27	46.5	3.44
Lakeview †	75	15	41.2	0.58
Langlois	70	33	52.2	5.94
Lone Rock	75	21	42.6	2.29
McMinnville *a* †	73	29	48.8	3.36
McMinnville *b* *[8]	76	34	48.7	2.02
Merlin *[8]	88	32	50.0	0.17
Monmouth *[8]	76	38	53.1	1.90
Mount Angel †	74	31	49.4	3.57
Newbridge	84	25	52.4	0.40
Newport	68	32	49.2	3.92
Oregon City	68	32	48.4	4.14
Pendleton	81	28	50.1	1.52
Portland *[8]	78	35	51.6	2.87
Riddles *[8]	80	36	48.6	0.54
Roseburg *[8]	76	36	52.1	1.11
Salem *a* *[8]	63	39	50.3	2.52
Salem *b* †	70	30	50.2	3.68
Sheridan *[8]	71	34	50.2	2.23
Silverton *[8]	70	30	48.3	4.01
Siskiyou *[8]	78	29	47.9	0.40
Springbrook	74	31	48.8	2.96
Springfield *[8]	74	31	49.6	3.40
The Dalles †	79	32	52.2	0.64
Tillamook R'k L. H.				5.40
Toledo	70	31	46.8	5.47
Umatilla †				1.03
Vale	78	20	48.6	1.37
Vernonia *[1]	75	32	48.0	3.67
West Fork *[8]	86	32	50.7	1.51
Weston	78	30	47.6	2.83
Williams	80	27	49.6	0.64
Pennsylvania.				
Altoona	78	27	53.0	1.69
Aqueduct	82	19	51.4	4.29
Beaver Dam †				2.22
Blooming Grove *[1]	79	26	45.0	2.75
Bloomsburg	76	20	48.2	4.58
Brookville †				3.00

Meteorological record of voluntary observers, &c.—Continued.

Stations.	Temperature. (Fahrenheit.) Max.	Min.	Mean	Precip'n.
Pennsylvania—Con.	°	°	°	*Ins.*
Browers Lock	.....	.....	.....	2.46
Carlisle *a*	78	20	50.0	3.61
Cassandra	74	20	47.8	3.78
Chambersburg †	76	20	48.2	1.96
Clarion †	.....	.....	.....	4.41
Coatesville †	79	19	49.4	4.20
Confluence †	.....	.....	.....	4.94
Coopersburg	77	20	49.4	3.18
Davis Island Dam †	.....	.....	.....	3.94
Doylestown	.....	.....	.....	3.30
Drifton	73°	5°	42.3°	4.52
Du Bois †	.....	.....	.....	3.79
Dyberry †	78	9	43.8	2.51
East Mauch Chunk	78	16	47.2	3.58
Easton	76	20	49.3	1.90
Edinboro *[1]	73	20	45.3	.....
Elwood Junction †	.....	.....	.....	2.60
Emporium	79	16	46.7	3.89
F'ks of Neshami'y[1]	.....	.....	51.6	3.20
Frederick	.....	.....	.....	2.03
Freeport †	.....	.....	.....	3.24
Grampian *[1]	76	16	46.0	2.98
Greensboro †	.....	.....	.....	3.31
Greenville	80	18	47.6	2.55
Hamburg	80	18	49.2	3.55
Hollidaysburg	81	14	48.6	3.08
Honesdale	72	13	44.9	3.30
Huntingdon †	79	16	48.8	3.19
Johnstown †	82	20	50.0	3.09
Kane	76	15	43.4	3.39
Kennett Square	78	21	49.4	3.80
Kilmer *[6]	83	28	52.5	4.86
Lancaster	76	23	49.2	4.30
Lansdale	.....	.....	.....	2.61
Lebanon	77	18	48.4	4.77
Le Roy †	73	16	42.8	6.12
Lewisburg	78	17	47.4	5.33
Ligonier	80	17	48.4	4.71
Lock Haven †	82	17	49.4	5.81
Lock No. 4 †	.....	.....	.....	2.95
Lycippus	80	22	49.0	3.99
Mahoning †	.....	.....	.....	3.94
Newcastle †	81	15	47.4	2.94
Oil City †	.....	.....	.....	3.17
Ottsville	.....	.....	.....	2.23
Parker †	.....	.....	.....	4.35
Philadelphia *a*	.....	.....	.....	3.05
Philadelphia *b*	80	25	52.0	3.22
Philadelphia *c*	77	26	51.0	3.52
Phœnixville	78	21	50.6	2.64
Point Pleasant	.....	.....	.....	3.74
Pottstown	81	24	51.4	3.20
Quakertown	77	19	48.0	2.27
Reading [2]	.....	.....	48.9	3.40
Ridgway †	.....	.....	.....	3.12
Saegerstown	80	15	46.0	2.55
Salem Corners	76	17	44.8	5.32
Saltsburg †	.....	.....	.....	2.56
Seisholtzville	.....	.....	.....	3.06
Selins Grove	79[d]	27[d]	46.2[d]	5.45
Shinglehouse	79	11	43.0	5.61
Smethport	78	14	43.8	4.22
Smiths Corners	.....	.....	.....	2.94
Somerset	76	18	46.7	10.00
South Eaton	74	15	45.8	2.76
State College	74	18	46.8	3.85
Stoyestown †	.....	.....	.....	3.85
Swarthmore	80	24	51.2	2.60
Uniontown	81	22	50.1	3.56
Warren †	.....	.....	.....	3.03
Wellsboro *†	74	14	41.9	8.69
West Chester	76	23	49.6	3.81
West Newton †	.....	.....	.....	3.15
Wilkesbarre †	80	18	48.4	3.41
York †	78	21	49.8	4.48
Rhode Island.				
Bristol	61	21	44.3	4.30
Kingston	74	18	44.5	4.07
Lonsdale	.....	.....	.....	3.32
Newport	68	25	47.2	.....
Pawtucket	78	23	47.5	3.31
Providence *a*	74	22	48.4	3.72
Providence *c*	76	19	45.7	3.61
South Carolina.				
Aiken	89	41	65 3	2.70
Anderson †	.....	.....	.....	2.60
Blacksburg	87	33	58.9	1.50
Blenheim *[3]	.....	39	58.8	2.45
Camden †	.....	.....	.....	1.56
Central [2]	.....	.....	59.2	2.02
Cheraw *a* †	87	35	62.0	5.26
Cheraw *b* †	.....	.....	.....	6.05
Clemson College †	.....	.....	.....	1.84
Conway †	.....	.....	.....	1.34
Coronaco †	.....	.....	.....	1.72
Cross Hill *[1]	93	40	64.7	1.89
Darlington *[1]	80	42	63.7	.....
Edisto †	.....	.....	.....	2.09
Effingham †	.....	.....	.....	1.34
Flint Hill †	90	34	61.2	2.75
Gaffney †	.....	.....	.....	1.87
Georgetown †	85	42	63.5	1.70
Greenville †	.....	.....	.....	1.68
Greenwood †	.....	.....	.....	1.60
Hollands Store †	89	30	59.1	2.42
S. Carolina—Cont'd.	°	°	°	*Ins.*
Kingstree † *b*	.....	.....	.....	1.30
Little Mountain *[1]	90	36	62.3	2.15
Longshore †	90	36	61.3	2.76
McCormick *†	88	35	61.6	2.82
Martins	.....	.....	.....	2.17
Mount Carmel †	.....	.....	.....	1.78
Pinopolis *[1]	82	42	62.2	0.71
Port Royal †	84	46	66.5	1.55
Reidville	86	34	60.9	0.81
St. Georges †	90	42	65.6	1.04
St. Matthews † [4]	88	42	65.6	1.43
St. Stephens †	.....	.....	.....	1.26
Santuck *[1]	86	40	61.2	2.43
Simpsonville †	95	35	61.2	1.01
Society Hill †	86	38	61.7	3.85
Statesburg †	86	39	63.0	1.42
Tatum Station *[7]	.....	41	59.4	2.22
Trenton	88	43	65.0	2.42
Trial †	90	38	63.0	0.72
Watts *[5]	92	35	62.3	1.79
Yorkville	87	30	60.6	1.62
South Dakota.				
Aberdeen †	75	28	46.2	4.48
Alexandria †	86	18	48.9	4.13
Armour †	80	21	49.8	2.38
Ashcroft †	75	20	46.1	1.68
Bowdle *†	81	30	42.7	2.63
Britton †	80[i]	21[i]	47.4[i]	5.36
Brookings †	82	7	43.3	3.04
Castlewood †	76[k]	17[k]	46.3[k]	3.60
Cross †	73	17	44.4	4.06
De Smet †	92	22	50.2	3.74
Farmingdale	.....	.....	.....	3.34
Faulkton †	84	22	45.4	2.44
Flandreau †	90	17	48.2	2.43
Forestburg †	85	14	48.5	3.39
Fort Meade	78	24	48.2	3.48
Fort Sully	82	24	50.4	1.55
Frankfort †	81	18	46.9	3.09
Gale †	66	22	45.2	2.64
Greenwood	86	20	50.8	2.87
Hermosa	.....	.....	.....	3.63
Hotch City †	83	19	50.2	2.47
Howard †	82	19	47.1	2.69
Kimball †	83	22	49.4	1.91
Midland †	96	22	51.6	2.63
Millbank †	79	24	45.9	3.73
Oelrichs †	85	.....	.....	2.85
Parker †	82	18	48.2	5.39
Parkston †	84	21	49.5	3.86
Piedmont	.....	.....	.....	3.64
Rockford	.....	.....	.....	2.74
Rosebud †	89	17	47.9	4.33
Shiloh †	83	16	48.4	.....
Silver City	.....	.....	.....	3.23
Sioux Falls †	81	20	49.5	2.87
Spearfish †	78	25	47.5	4.76
Tyndall †	99	21	52.7	3.56
Vermillion †	86	16	49.6	3.00
Watertown †	83	21	47.3	3.39
Webster †	83	19	45.9	7.29
Wentworth †	81	16	45.0	3.28
Wessington †	.....	.....	.....	2.80
Wessington Sp'gs †	92	25	48.6	1.73
Tennessee.				
Andersonville *[1]	90	33	55.2	2.60
Ashwood *†	87	37	60.1	4.58
Bolivar †	.....	.....	.....	7.50
Bristol †	86	26	54.4	1.80
Byrdstown †	87	27	56.6	3.46
Carthage †	.....	.....	.....	2.84
Charleston †	.....	.....	.....	2.47
Clarksville	* 89	33	59.1	5.54
Clinton †	.....	.....	.....	2.79
Columbia †	.....	.....	.....	5.12
Covington *a* †	87	38	61.0	6.67
Florence Station *[1]	87	39	60.1	3.42
Franklin †	87	31	57.1	3.64
Greeneville †	85	28	55.8	2.54
Harrogate †	81	32	56.2	4.41
Hohenwald	92	28	57.7	5.49
Jacksboro *[8]	85	31	54.3	3.68
Jackson *[1]	86	38	59.5	4.50
Johnsonville †	.....	.....	.....	4.23
Kingston †	.....	.....	.....	3.14
Loudon †	.....	.....	.....	3.00
Lynnville *[1]	87	34	59.8	3.99
Missionary Ridge *[2]	.....	39	59.1	.....
Newport *[3]	86	29	55.1	2.40
Nunnelly *[1]	89	35	61.8	5.52
Palmetto †	.....	.....	.....	4.00
Parksville *[1]	89	32	59.5	2.63
Pikeville *[1]	89	34	57.5	3.80
Riddleton †	87	30	56.4	3.18
Rockwood †	.....	.....	.....	2.81
Rogersville *[1]	85	34	54.7	2.57
Savannah *[1] *e*	88	47	65.2	4.38
Springdale *[1]	86	32	56.3	2.60
Strawberry Plains †	.....	.....	.....	1.48
Trenton	89	36	59.4	6.74
Tullahoma *†	84	32	57.0	2.90
Waynesboro *[1]	90	32	57.5	4.46
Wier *†	89	28	58.4	3.08
Texas.				
Arlington †	92	23	68.5	4.56

Meteorological record of voluntary observers, &c.—Continued.

Stations.	Temperature. (Fahrenheit.) Max.	Min.	Mean	Precip'n.
Texas—Cont'd.	°	°	°	*Ins.*
Arthur City †	.....	.....	.....	7.62
Aurora *[1]	99	44	68.4	1.83
Austin *[9]	96	48	72.6	.....
Belton †	97	38	72.0	7.44
Boerne *† [3]	96	45	68.5	7.78
Brady †	98	41	70.4	1.55
Brazoria †	86	47	72.8	5.53
Brenham †	90	47	72.7	4.10
Burnet *† [1]	90	46	71.8	6.34
Camp Eagle Pass	104	49	77.0	0.93
Childress †	95	41	67.8	4.64
Coldwater †	.....	.....	.....	2.45
Coleman	.....	.....	.....	1.31
College Station	87	47	70.5	3.24
Columbia †	89	48	74.1	5.00
Corsicana *b* †	88	45	68.6	8.37
Cuero †	94°	49°	74.3°	1.58
Dallas †	91	47	69.2	5.72
Devine	98	41	72.9	2.44
Durham †	.....	.....	.....	1.27
Duval *[1]	102	46	73.6	6.35
Eastland *† [1]	101	46	71.1	1.45
Estelle †	92	39	68.9	3.08
Forestburg †	90	40	65.2	2.79
Fort Brown †	95	57	78.0	0.04
Fort Clark	103	52	76.3	4.66
Fort Hancock	95	25	59.1	0.62
Fort McIntosh	103	55	79.0	2.20
Fort Ringgold †	104	58	80.2	2.10
Fredericksburg *†	96	42	69.1	10.34
Gainesville †	91	40	67.7	2.54
Graham †	98	37	67.9	3.80
Grape Vine †	91	42	68.3	2.40
Hale Center †	91	36	64.3	T.
Hallettsville †	92	46	73.1	3.58
Hartley †	82	22	52.1	1.95
Haskell †	100	46	65.8	0.89
Highland	102[d]	38[b]	68.6[b]	3.00
Houston †	92	48	71.5	1.45
Huntsville †	90	44	71.3	2.45
Kent	.....	.....	.....	0.18
Kyle *† [5]	92[b]	56	74.4	2.99
Llano *† [3]	96	40	70.8	2.10
Longview †	92	43	70.2	4.25
Luling †	92	47	73.8	6.12
McGregor †	82	35	59.8	7.29
Marshall †	89	40	67.1	5.30
Menardville *† [1]	98	51	70.2	0.77
Mountain Spring †	91	42	68.6	2.88
New Braunfels †	97	49	72.5	3.07
Orange †	84	52	71.9	1.36
Panter *† [3]	95[d]	55[d]	65.2[d]	2.81
Paris †	88	41	67.4	7.70
Roby †	97	32°	65.4°	1.43
Rockport *[1]	84	58	74.1	.....
Rock Springs †	.....	.....	.....	3.17
San Marcos †	.....	.....	.....	3.50
Sugar Land †	88	52	73.8	3.40
Sulphur Springs †	94	43	66.6	7.93
Temple †	93	43	70.0	9.05
Victoria *† [1]	87[f]	59[g]	73.8[g]	2.82
Waco †	93	43	70.7	9.65
Weatherford †	93	40	68.6	1.71
Wichita Falls †	101	41	76.7	3.14
Utah.				
Blue Creek *[3]	72	34	49.0	0.15
Castle Gate †	76	23	46.3	0.08
Cisco †	86	26	54.2	0.48
Coalville †	81	18	42.2	0.50
Corinne *[3]	89	39	57.5	0.61
Deseret †	80	21	48.3	0.64
Fillmore †	86	17	48.6	2.43
Fort Du Chesne †	75	18	47.9	T.
Grouse Creek *† [1]	72	26	40.6	1.51
Heber †	76	20	42.8	0.41
Kelton *[3]	80	30	48.1	0.10
Koosharem	73	18	41.7	0.26
Lake Station *[1]	73	32	47.0	.....
Levan † [2]	.....	.....	46.4	2.30
Loa †	78	17	42.7	0.13
Logan †	74	28	46.8	1.41
Lo-ee †	76	22	47.6	T.
Manti †	72	24	48.4	0.60
Moab †	89	26	55.4	0.58
Mount Pleasant *† [1]	78	28	46.2	0.51
Ogden *a* *[3]	78	30	48.8	2.05
Ogden *b* *† [1]	75	33	52.7	1.92
Parowan †	77	22	47.0	1.27
Promontory *[3]	72	26	43.9	0.85
Provo City † [3]	.....	.....	49.2	0.40
Randolph †	71	12	38.2	0.75
Richfield †	78	23	48.6	1.12
St. George †	91	29	57.8	0.01
Scofield †	74	8	37.2	0.39
Silver Lake *[1]	50	4	30.2	3.00
Singletree *† [1]	77	19	41.8	0.20
Snowville †	75	23	45.0	0.65
Soldier Summit †	71	12	35.8	0.33
Terrace *[3]	68	35	51.8	T.
Thistle †	80	18	43.8	.....
Vermont.				
Brattleboro	80	15	47.4	1.37
Burlington †	72	20	46.8	0.86
Cornwall	74	14	47.2	0.88
Enosburg Falls †	78	12	45.8	1.86
Vermont—Cont'd.	°	°	°	*Ins.*
Hartland †	74	10	43.6	2.17
Irasburg †	73	10	42.3	1.64
Jacksonville	69	7	38.8	2.66
Norwich *[6]	72[e]	10	44.3	1.69
St. Johnsbury	73	13	44.4	1.86
Simonsville	67	5	38.8	.....
Strafford *† [1]	70	12	43.6	1.40
Vernon *[6]	73	18	44.4	1.70
Wells	74	10	43.4	1.35
Woodstock	78	12	45.0	1.83
Virginia.				
Abingdon †	.....	.....	.....	2.11
Alexandria	84	30	53.6	2.63
Ashland †	86	28	56.1	2.38
Avon †	90	21	55.6	2.58
Bedford City †	84	29	55.8	1.51
Big Stone Gap †	83	21	51.7	3.52
Birdsnest *† [1]	82	34	53.8	4.20
Blacksburg	79	21	49.0	1.17
Buchanan †	.....	.....	.....	1.80
Cape Charles † [1]	72[b]	29	50.8	2.84
Christiansburg †	.....	.....	.....	0.75
Clarksville †	.....	.....	.....	2.54
Dale Enterprise †	82	19	50.2	1.60
Danville †	.....	.....	.....	1.42
Falls Church †	.....	.....	.....	3.22
Fredericksburg †	86	21	54.5	2.58
Hampton	86	36	54.9	2.62
Hot Springs	80	19	48.1	1.63
Houston †	84	28	56.3	1.68
Irwin †	83	24	55.7	1.78
Lexington †	86	20	51.7	1.76
Marion †	79	27	52.0	3.54
Nottoway	88	25	56.3	2.40
Petersburg †	86	30	56.7	3.47
Richmond *a* †	92	29	57.1	3.19
Richmond *b* †	.....	.....	.....	3.20
Riverton †	.....	.....	.....	2.70
Salem †	81	28	55.2	1.42
Saluda †	86	30	54.3	3.46
Spottsville †	88	30	54.6	2.67
Stanardsville †	.....	.....	.....	2.94
Staunton †	84	22	52.6	1.57
Stephens City †	83	22	52.4	2.85
Warsaw †	84	29	54.4	3.05
Woodstock †	.....	.....	.....	1.95
Wytheville †	79	24	50.3	1.55
Washington.				
Aberdeen †	81	31	47.8	5.47
Anacortes	.....	.....	.....	4.42
Blaine †	70	27	45.2	8.23
Bridgeport †	82	25	50.2	0.14
Chehalis †	77	31	47.3	3.45
Colfax †	76	28	47.6	2.01
Connell †	87	22	50.4	0.57
Davenport †	78	24	45.1	0.63
East Sound †	65	34	46.4	3.32
Elbe	.....	.....	.....	7.59
Ellensburg †	74	22	42.5	0.67
Ferry †	80	28	49.0	6.03
Fort Simcoe	77	27	50.2	0.73
Fort Spokane	80	22	47.5	0.54
Fort Townsend	69	28	46.4	2.36
Hunters †	72	20	40.4	1.34
Kennewick †	84	29[e]	.....	0.92
Lakeside †	71	29	48.2	0.34
Lapush †	72	32	46.0	12.72
Madrone *† [1]	72	31	47.5	3.20
Moxee Valley †	80	22	49.8	0.74
Olga †	67	32	45.6	4.97
Pine Hill *[1]	74	34	49.9	1.13
Pomeroy †	79	31	51.1	1.55
Pullman †	73	26	45.0	1.23
Rosalia †	74	28	49.6	1.59
Silver Creek *[1]	72	32	46.1	5.62
Snohomish †	78	31	48.8	6.26
Stillaguamish †	75	27	47.6	6.02
Tacoma †	73	30	47.5	3.88
Union City *† [1]	74	30	45.4	5.78
Vashon †	73	22	42.0	3.25
Waterville †	70	20	43.6	0.51
Wenatchee Lake †	70	20	40.4	2.51
West Ferndale †	72	25	44.6	6.26
West Virginia.				
Beverly †	86	26	49.4	5.30
Bloomery †	75	17	46.6	2.05
Bluefield †	84	23	50.5	3.36
Buckhannon *a* †	.....	.....	.....	4.73
Buckhannon *b* †	83	21	49.8	.....
Burlington †	82	18	49.6	2.55
Central Station *† [1]	80	22	51.6	2.68
Charleston †	.....	.....	.....	3.06
Cloverdale †	.....	.....	.....	2.04
Davis †	75	18	42.9	2.63
Elkhorn †	81	28	52.9	2.99
Ella †	82	26	50.0	4.03
Fairmont †	.....	.....	.....	3.51
Glenville †	83	22	51.0	4.39
Grafton †	85	21	50.4	4.13
Harpers Ferry †	.....	.....	.....	3.39
Hinton †	.....	.....	.....	1.97
Madison [2]	82	32	55.0	2.95
Marlinton †	80	16	47.2	2.66
Martinsburg †	81	24	50.7	2.97
Monarch *† [1]	84	33	53.4	3.18

Meteorological record of voluntary observers, &c.—Continued.

Stations.	Temperature. (Fahrenheit.) Max.	Min.	Mean	Precip'n.
W. Virginia—Cont'd	°	°	°	*Ins.*
Morgantown *a* †	.....	.....	.....	2.95
Morgantown *b* †	.....	23	.....	.....
New Martinsv'le †	85	23	52.9	3.51
Parkersburg †	88	20	52.2	3.98
Philippi †	.....	.....	.....	4.16
Pleasant Hill *[2]	78	14	46.7	6.91
Point Pleasant †	88	27	54.4	2.64
Raleigh †	77	24	46.9	1.06
Rowlesburg †	.....	.....	.....	4.81
Sandyville *† [1]	83	24	50.0	2.68
Spencer †	90	30	53.4	2.81
Tannery *[1]	80	30	50.3	.....
Weston *a* †	.....	.....	.....	4.46
Weston *b* *[1]	76	27	52.3	.....
Wheeling *a* †	.....	.....	.....	3.28
Wheeling *b* †	82	29	53.5	3.47
Wisconsin.				
Amherst	76	21	46.8	3.21
Ashland † *	82	22	45.7	.....
Baraboo †	.....	.....	.....	3.11
Barron †	75	21	45.1	4.64
Bayfield	60	15	38.8	4.70
Beaver Dam	78	25	48.2	4.72
Belleville	81	25	47.6	6.36
Beloit	82	29	50.2	3.49
Black River Falls †	87	15	48.2	4.37
Cadiz *[2]	.....	24	46.2	6.61
Centralia	79	22	49.2	3.60
Chilton	79	25	46.8	2.70
Chippewa Falls †	.....	.....	.....	2.82
City Point	78	20	48.8	4.18
Crandon †	77	9	41.8	1.81
Delavan †	82	27	48.1	3.79
Eau Claire	77	25	48.4	2.92
Estella †	76	18	45.7	3.67
Florence †	74	6	41.1	2.74
Fond du Lac †	80	26	47.0	1.94
Grantsburg †	79	26	48.6	5.15
Hartford *† [4]	.....	26	43.4	2.92
Harvey †	80	25	47.2	3.23
Hayward †	83	16	45.8	1.70
Hillsboro	77	20	47.4	5.34
Janesville	82	23	49.0	2.40
Juneau †	78	20	48.2	3.62
Kenosha *[10]	72	32	46.8	.....
Koepenick *† [1]	84	22	45.8	3.50
Lancaster †	80	26	49.6	2.58
Lincoln † [2]	.....	.....	45.7	2.72
Madison †	72	29	47.8	2.81
Manitowoc †	69	22	43.2	2.47
Meadow Valley †	76	22	47.9	1.41
Medford *b* †	75	17	44.8	4.07
Menomonie	78	20	46.4	5.65
Wisconsin—Cont'd.	°	°	°	*Ins.*
Neillsville †	76	20	47.4	3.69
New Holstein †	77	22	44.8	2.18
Oconomowoc †	77	27	48.6	3.10
Oconto	82	18	45.7	2.86
Osceola †	79	20	47.4	4.74
Pepin	85	22	50.2	3.31
Portage †	.....	.....	.....	3.38
Port Washington	71	24	44.2	3.25
Prairie du Chien	83	19	50.0	2.51
Racine *[10]	77	30	44.8	.....
Reedsburg †	79	25	49.2	3.22
Sharon †	82	29	49.0	2.73
Shawano	77	17	45.2	2.36
Sheboygan *[10]	69	30	44.6	.....
Spooner †	.....	.....	.....	3.01
Stevens Point †	76	21	47.2	2.93
Sturgeon B. Canal *[10]	68	21	41.2	.....
Two Rivers *[10]	70	22	44.6	.....
Valley Junction †	78	20	48.0	4.02
Viroqua	77	24	49.1	5.31
Watertown †	76	23	46.4	2.88
Waukesha †	76	27	47.5	2.94
Westfield †	75	23	47.6	3.37
Weston *† [3]	80	28	46.4	3.89
Whitehall †	80	21	51.4	3.28
Wyoming.				
Big Horn Ranch †	64	10	39.2	0.80
Camp Pilot Butte †	74	6	41.5	0.70
Fort McKinney	74	22	44.6	1.23
Fort Washakie	68	10	42.8	0.92
Fort Yellowstone †	66	8	38.0	1.87
La Barge *† [1]	80	8	29.7	0.29
Lander	66	22	43.8	0.96
Laramie	66	7	39.1	1.51
Lusk	77	18	46.4	2.83
Saratoga †	67	16	40.6	1.87
Sheridan	81	23	47.7	1.50
Sundance	72	19	42.2	0.84
Wheatland †	76	11	47.8	0.46
Canada.				
Fort Francis, Ont	75	8	37.6	4.19
Mexico.				
Cuidad P. Diaz	98	53	78.2	0.91
Leon de Aldamas	92	51	71.0	0.13
Mexico	82	46	64.8	0.37
Puebla	82	50	67.3	T.
Topolobampo	98	67	73.4	0.00
Vera Cruz	88	68	78.8	0.27
New Brunswick.				
St. John	61	13	37.8	4.40
West Indies.				
Grand Turk Island	.....	.....	.....	0.75
Hamilton, Ber	73	55	64.2	2.03

Reports received too late to be used in general discussion of weather for April, 1894.

Stations.	Temperature. (Fahrenheit.) Max.	Min.	Mean	Precip'n.
California.				
Hueneme	.....	.....	.....	0.15
Los Alamos	.....	.....	.....	0.28
Pilot Creek	.....	.....	.....	4.51
Riverside	92	34	60.3	0.03
San Jacinto	93	30	60.0	0.10
Salinas (*a*)	.....	.....	.....	0.53
Summerdale	.....	.....	.....	1.43
Georgia.				
Lumpkin	86[4]	43[4]	65.3[4]	2.09
Illinois.				
Oregon	88	25	55.4	2.57
Kansas.				
Bucklin	.....	.....	.....	1.75
Lawrence [1]	90	32	58.3	3.09
Missouri.				
Nesho	92	27	59.3	3.54
New Mexico.				
Estalina Springs	.....	.....	.....	0.65
New York.				
Brentwood *† [1]	72°	21	45.8	3.70
Canton	74	12	44.4	1.59
Pennsylvania.				
Gettysburg	.....	.....	.....	3.94
Tennessee.				
Rugby *[1]	84	35	53.0	3.23
Texas.				
Corsicana *a*	91	41	70.4	9.14
Earls Ranch	.....	.....	.....	11.62
Golindo	.....	.....	.....	11.15
Ochiltree	.....	.....	.....	2.10
Round Rock	96	38	73.0	2.98
Virginia.				
Charlottesville	85	26	55.8	2.34

Received too late for publication in March, 1894.

Stations.	Temperature. (Fahrenheit.) Max.	Min.	Mean	Precip'n.
Alabama.				
Oxanna *[1]	83	20	59.3	4.11
California.				
Davisville *b*	90	37	60.0	0.60
Hendersons Ranch	.....	.....	.....	0.15
Salinas *b* *[2]	65	37	50.7	0.58
San Jacinto	91	24	53.4	0.89
Sutter Creek *[5]	72	22	44.2	1.06
Colorado.				
Juleasburg	75	— 2	44.4	0.20
La Porte	.....	.....	.....	0.68
Georgia.				
Dublin *b* †	.....	.....	.....	3.91
Indian Territory.				
Healdton	.....	.....	.....	5.18
Kansas.				
Lakin	.....	10	42.9	.....
Kentucky.				
Earlington	83	18	54.2	5.82
Michigan.				
St. Johns	76	10	40.9	.....
New Mexico.				
Estalina Springs	70	13	42.7°	0.59
Tennessee.				
Johnsonville †	.....	.....	.....	3.80

Reports received too late, &c.—Continued.

Stations.	Temperature. (Fahrenheit.) Max.	Min.	Mean	Precip'n.
Texas.	°	°	°	*Ins.*
College Station	83	29	61.1	2.56
Earles Ranch	.....	.....	.....	2.63
Golindo	.....	.....	.....	3.65
Haskell	83	28	50.4	1.24
Panter *[1] †	99	28	60.8	2.19
Texas—Cont'd.	°	°	°	*Ins.*
San Antonio	92	32	65.1	0.77
Sulphur Springs	86	24	58.7	7.34
Mexico.				
Topolobampo *[2]	85	57	67.8	T.
Vera Cruz	88	59	74.8	0.56

EXPLANATION OF SIGNS.

*Extremes of temperature from observed readings of dry thermometer.

† Weather Bureau instruments.

A numeral following the name of a station indicates the hours of observation from which the mean temperature was obtained, thus:

[1] Mean of 7 a. m. + 2 p. m. + 9 p. m. + 9 p. m. + 4.
[2] Mean of 8 a. m. + 8 p. m. + 2.
[3] Mean of 7 a. m. + 7 p. m. + 2.
[4] Mean of 6 a. m. + 6 p. m. + 2.
[5] Mean of 7 a. m. + 2 p. m. + 2.
[6] Mean from readings at various hours reduced to true daily mean by special tables.
[7] Mean from hourly readings of thermograph.
[8] Mean of 7 a. m. + 2 p. m. + 9 p. m. + 3.
[9] Mean of sunrise and noon.
[10] Mean of sunrise, noon, sunset, and midnight.

The absence of a numeral indicates that the mean temperature has been obtained from daily readings of the maximum and minimum thermometers.

An Italic letter following the name of a station, as "Livingston *a*," "Livingston *b*," indicates that two or more observers, as the case may be, are reporting from the same station. A small Roman letter following the name of a station, or in figure columns, indicates the number of days missing from the record; for instance, "*a*" denotes 14 days missing.

No note is made of breaks in the continuity of temperature records when the same do not exceed two days. All known breaks, of whatever duration, in the precipitation record receive appropriate notice.

Corrections: Kansas, Lakin, from April, 1893, to February, 1894, inclusive, all minimum temperature readings are 10° too low, and all mean temperatures for the same period 5° too low.

NOTE.—The following changes have been made in names of stations: Maryland, Valley Lee, changed to Cherryfields; Georgia, Cohutta, changed to Ramsey.

TABLE III—*Data from Canadian stations for the month of April*, 1894.

Station.	Pressure. Mean not reduced.	Mean reduced.	Departure from normal.	Temperature. Mean.	Departure from normal.	Precipitation. Total.	Departure from normal.	Prevailing direction of wind.
	Inches.	*Inches.*	*Inches.*	°	°	*Inches.*	*Inches.*	
St. Johns, N. F.	.....	.....	.....	.....	.....	.....	.....	.....
Sydney, N. S	29.95	30.01	+ .14	33.6	— 0.9	5.05	+ 1.25	ne.
Grindstone, G. S. L.	29.96	29.99	.....	30.8	.....	1.75	.....	ne.
Sandy Point, N. F.	.....	.....	.....	.....	.....	.....	.....	.....
Halifax, N. S	29.87	30.00	+ .12	37.0	— 0.5	5.23	+ 1.92	n.
Grand Manan, N. B.	29.96	30.01	.....	38.4	.....	4.09	+ 0.69	ne.
Yarmouth, N. S	29.90	29.98	+ .07	38.8	— 0.2	3.13	+ 0.19	ne.
Saint Andrews, N. B	29.94	29.99	.....	38.6	.....	2.53	— 0.03	ne.
Charlottetown, P. E. I.	29.96	30.00	.....	34.4	.....	2.20	— 0.72	ne.
Chatham, N. B	30.04	30.06	+ .14	34.4	+ 0.9	2.03	— 1.07	e.
Father Point, Que	30.03	30.06	+ .15	34.0	+ 1.5	1.12	— 0.90	e.
Quebec, Que	29.71	30.05	+ .10	37.1	+ 2.6	0.83	— 1.56	ne.
Montreal, Que	29.82	30.03	+ .07	43.6	+ 3.1	0.61	— 1.83	n.
Rockliffe, Ont.	29.50	30.02	+ .06	41.6	+ 7.6	0.78	— 0.46	nw.
Kingston, Ont	29.72	30.04	+ .07	43.2	+ 4.7	1.51	— 0.44	ne.
Toronto, Ont	29.67	30.06	+ .07	43.6	+ 3.6	1.33	— 0.55	n.
White River, Ont.	28.70	30.08	.....	35.4	+ 4.3	0.74	— 0.18	n.
Port Stanley, Ont	29.40	30.05	+ .04	42.4	.....	2.45	+ 0.32	e.
Saugeen, Ont	29.32	30.05	+ .05	41.8	+ 4.8	1.26	— 0.57	se.
Parry Sound, Ont.	29.34	30.05	+ .07	41.8	+ 7.3	0.53	— 1.19	e.
Port Arthur, Ont	29.30	30.01	— .01	35.2	+ 2.7	2.20	+ 0.89	ne.
Winnipeg, Man.	29.14	29.98	— .05	38.6	+ 5.1	3.56	+ 2.21	ne.
Minnedosa, Man.	28.12	29.95	— .03	37.6	+ 4.1	1.21	+ 0.09	se.
Qu'Appelle, Assiniboia	27.64	29.93	— .03	38.9	+ 3.4	1.49	+ 0.43	s.
Medicine Hat, Assiniboia	27.56	29.88	— .04	41.2	— 2.8	0.54	+ 0.03	sw.
Swift Current, Assiniboia	27.30	29.90	— .10	42.2	+ 3.7	0.95	— 0.23	s.
Calgary, Alberta	26.30	29.87	— .05	40.1	+ 2.1	0.96	+ 0.34	w.
Prince Albert, Sask.	.....	.....	.....	.....	.....	.....	.....	.....
Edmonton, Alberta	27.49	29.85	— .06	40.4	+ 0.2	0.10	— 0.47	nw.
Battleford, Saskatchew'n	28.12	29.88	.....	37.0	.....	0.87	.....	se.
Spences Bridge, B. C	29.12	29.94	.....	48.8	.....	0.23	.....	sw.
Hamilton, Bermuda	29.93	30.09	+ .04	63.4	.....	2.57	.....	n.
Anticosti, G. St. L.	30.02	30.05	+ .13	31.2	+ 0.4	1.57	.....	e.
March, 1894.								
Swift Current, Assiniboia	27.30	30.01	— .09	20.0	— 3.0	1.02	+ 0.20	nw.
Prince Albert, Sask.	28.46	30.01	.....	11.5	.....	0.89	.....	nw.

TABLE IV.—*Hourly sunshine as deduced from sunshine recorders, April*, 1894.

Stations.	Instrument.	Percentage for each hour of local mean time ending with the respective hour.																Monthly summary.			
		A. M.								P. M.								Instrumental record.			Personal estimate.
		5	6	7	8	9	10	11	Noon.	1	2	3	4	5	6	7	8	Actual.	Possible.	Per cent of possible.	
																		Hours.	*Hours.*		
Baltimore, Md	T.	.....	37	48	61	68	78	81	85	87	83	68	67	64	50	35	.....	265.6	395.8	67	54
Bismarck, N. Dak	P.	21	32	39	48	51	51	49	37	53	52	57	59	51	40	30	.....	190.2	407.8	46	46
Boston, Mass	T.	.....	39	43	55	58	65	70	62	56	58	53	50	42	36	28	.....	208.1	401.5	51	42
Buffalo, N. Y	T.	.....	21	27	51	62	66	74	72	70	74	63	62	52	37	27	.....	223.2	402.3	56	47
Chicago, Ill	T.	.....	58	55	54	68	78	81	78	81	71	68	62	57	45	33	.....	257.9	401.4	64	51
Cincinnati, Ohio	P.	.....	37	42	51	57	59	58	61	66	67	63	60	56	55	37	.....	222.3	396.8	56	50
Cleveland, Ohio	P.	.....	48	47	57	59	65	63	58	66	66	63	56	54	48	50	.....	230.1	400.8	57	47
Colorado Springs, Colo.	T.	.....	58	67	75	76	83	85	93	90	79	71	58	47	36	48	.....	277.6	396.5	70	61
Columbus, Ohio	T.	.....	30	32	49	58	64	70	82	84	76	69	59	61	46	48	.....	239.4	399.1	60	42
Denver, Colo	P.	.....	60	70	72	71	76	77	79	82	76	70	56	52	49	48	.....	269.3	396.9	68	56
Des Moines, Iowa	T.	.....	46	47	52	56	59	56	62	74	73	56	53	42	26	21	.....	210.2	401.0	52	46
Detroit, Mich	T.	.....	31	41	51	65	72	68	64	73	60	57	50	45	41	44	.....	221.7	401.5	55	45
Dodge City, Kans	P.	.....	49	61	67	78	87	84	74	79	85	88	82	79	57	44	.....	293.1	394.8	74	69
Eastport, Me	P.	21	34	34	39	42	51	53	46	43	45	49	51	48	49	35	.....	181.5	405.4	44	33
Galveston, Tex.	P.	.....	24	31	55	64	63	68	70	76	77	68	62	62	45	16	.....	227.5	386.6	59	58
Helena, Mont.	P.	45	33	39	51	59	66	72	66	67	71	63	71	59	65	64	34	247.6	408.6	60	49
Kansas City, Mo	P.	.....	38	48	50	60	63	66	66	68	69	70	71	67	52	35	.....	238.4	396.0	61	54
Key West, Fla	T.	.....	75	82	86	85	90	95	98	98	97	100	94	91	89	76	.....	349.1	382.4	91	73
Little Rock, Ark	T.	.....	48	53	57	61	74	83	86	80	80	77	68	61	56	55	.....	267.6	392.2	68	52
Louisville, Ky	T.	.....	48	52	56	61	58	63	67	63	54	58	55	50	44	37	.....	219.6	396.8	55	44
Memphis, Tenn	P.	.....	41	52	64	71	69	77	75	75	75	70	73	65	60	53	.....	262.8	391.4	67	66
New Haven, Conn	T.	.....	25	37	52	61	66	76	78	74	69	69	58	57	35	17	.....	227.9	398.7	57	48
New Orleans, La	T.	.....	13	21	47	76	75	83	84	87	81	78	69	65	53	25	.....	251.1	385.5	65	55
New York, N. Y.	T.	.....	27	38	52	62	67	73	77	71	72	76	64	53	35	22	.....	231.6	399.8	58	47
Philadelphia, Pa	T.	.....	65	61	64	61	66	67	66	65	69	58	60	54	57	52	.....	247.0	396.6	62	50
Portland, Me	T.	.....	33	43	57	67	73	77	76	72	71	67	59	49	36	15	.....	234.7	402.1	58	39
Portland, Oreg	P.	.....	21	20	27	33	36	40	45	46	47	45	44	40	31	33	.....	148.4	405.7	37	33
Rochester, N. Y	T.	.....	49	44	49	54	62	64	65	67	66	66	58	50	46	29	.....	223.5	397.0	56	51
Saint Louis, Mo	T.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	54
Salt Lake City, Utah	T.	.....	47	50	59	69	72	67	71	71	74	69	67	64	41	30	.....	247.2	398.3	62	48
San Diego, Cal	P.	.....	37	29	40	49	76	82	84	89	82	73	64	62	40	40	.....	242.8	390.5	62	60
San Francisco, Cal	P.	.....	14	20	55	72	80	87	85	90	92	94	94	89	80	61	.....	294.8	394.2	75	72
Santa Fe, N. Mex	P.	.....	63	71	86	91	92	91	84	84	82	80	75	71	59	55	.....	309.4	392.4	79	65
Savannah, Ga	P.	.....	48	63	78	83	81	81	77	78	73	77	77	69	59	57	.....	284.7	389.7	73	57
Tucson, Ariz	P.	.....	67	79	90	91	88	92	89	92	92	91	90	87	77	65	.....	337.0	390.9	86	78
Vicksburg, Miss	T.	.....	48	47	52	64	78	78	89	86	89	81	77	62	51	36	.....	268.0	391.2	68	65
Washington, D. C	P.	.....	51	50	60	58	61	66	64	56	58	60	60	54	47	48	.....	226.2	397.3	57	56
Wilmington, N. C	T.	.....	55	53	60	70	72	75	70	73	68	67	61	49	49	49	.....	246.4	391.9	63	64

TABLE V.—*Mean temperature for each hour of seventy-fifth meridian time, April, 1894.*

Stations.	1 a. m.	2 a. m.	3 a. m.	4 a. m.	5 a. m.	6 a. m.	7 a. m.	8 a. m.	9 a. m.	10 a. m.	11 a. m.	Noon.	1 p. m.	2 p. m.	3 p. m.	4 p. m.	5 p. m.	6 p. m.	7 p. m.	8 p. m.	9 p. m.	10 p. m.	11 p. m.	Midnight.	Mean.
Abilene, Tex	64.7	63.6	62.1	61.2	60.0	59.2	58.7	58.8	61.4	64.9	67.8	70.5	73.2	75.1	77.0	78.6	78.7	78.8	77.6	75.7	72.8	69.1	66.7	64.8	68.4
Albany, N. Y	44.9	44.3	43.5	43.0	42.2	42.1	43.2	45.7	47.4	49.2	51.1	52.5	53.8	54.5	54.8	54.8	54.1	52.9	51.2	49.9	48.7	47.4	46.0	45.9	48.5
Alpena, Mich	38.7	38.3	38.2	38.0	37.5	37.4	37.7	39.2	40.9	42.2	43.1	43.7	44.5	45.1	45.6	45.8	45.6	45.2	44.0	42.3	42.0	41.2	40.4	39.7	41.5
Amarillo, Tex	53.6	52.5	51.2	50.6	49.8	49.0	48.0	47.9	49.3	52.7	55.6	58.4	61.1	63.5	64.9	66.5	67.4	67.8	66.8	65.4	62.1	59.4	57.3	55.4	57.3
Atlanta, Ga	57.9	57.1	56.2	55.6	54.6	54.1	54.0	55.9	58.3	60.5	63.0	65.7	67.4	68.6	69.4	70.2	70.1	68.9	67.1	65.0	63.5	62.1	60.5	59.3	61.9
Augusta, Ga	59.7	58.6	57.8	57.0	56.1	55.6	55.4	57.9	59.9	63.1	66.1	68.0	69.3	70.6	71.4	72.5	72.6	72.2	71.0	67.0	65.8	63.9	62.2	60.9	63.9
Baker City, Oreg	42.1	40.9	39.8	38.8	38.0	37.3	36.5	39.0	36.1	38.1	40.1	44.0	46.7	49.1	50.5	51.5	52.6	52.3	52.3	51.3	49.4	46.9	44.6	43.3	44.1
Baltimore, Md	48.8	48.0	47.2	46.7	46.0	45.6	46.8	49.2	50.8	52.7	54.2	55.9	57.1	57.7	57.9	57.7	57.1	56.3	54.8	53.7	52.8	51.3	50.3	49.4	52.0
Bismarck, N. Dak	40.1	39.6	39.3	38.3	38.0	37.6	37.3	37.2	38.5	40.3	42.9	44.4	46.2	47.8	49.0	49.8	50.3	50.5	50.1	49.0	46.9	44.9	43.3	42.0	43.5
Boston, Mass	43.8	43.6	43.4	42.9	42.4	42.5	43.4	45.5	47.1	48.2	49.0	49.3	49.9	50.3	50.1	49.9	50.0	48.9	48.0	47.1	46.2	45.7	45.0	44.6	46.5
Buffalo, N. Y	42.8	42.2	42.1	41.8	41.6	41.2	41.9	43.6	44.3	45.0	46.2	47.3	48.0	48.6	48.3	48.5	47.9	47.7	46.7	45.6	45.0	44.5	44.1	43.9	44.9
Charleston, S. C	61.4	60.8	60.4	59.9	59.2	58.7	59.3	61.7	63.9	66.0	67.7	69.1	70.1	70.0	69.7	69.0	68.0	66.8	65.3	63.9	63.6	63.0	62.5	62.1	64.2
Charlotte, N. C	54.7	53.6	52.5	51.7	50.9	50.4	51.1	54.0	56.4	59.1	61.3	63.1	64.7	66.0	66.0	66.7	66.5	65.0	63.4	61.7	60.0	58.5	57.1	55.9	58.8
Cheyenne, Wyo	39.4	38.2	36.7	35.7	35.1	34.4	33.9	34.1	38.8	43.4	46.2	48.8	50.3	51.7	53.2	53.6	53.7	53.5	52.6	51.0	47.7	44.7	42.4	40.6	44.1
Chicago, Ill	45.3	45.0	45.1	44.9	44.4	44.3	44.4	45.1	46.2	47.4	48.2	48.9	49.6	49.4	49.6	49.8	49.1	47.6	47.0	47.0	46.7	46.6	46.5	46.5	46.9
Cincinnati, Ohio	51.9	51.1	50.1	49.5	48.8	48.2	48.0	48.9	51.6	53.7	55.7	57.1	58.1	59.6	60.6	61.0	60.9	60.4	59.8	58.4	57.3	55.7	54.4	53.3	54.7
Cleveland, Ohio	45.8	44.9	43.9	43.3	42.5	42.4	42.6	44.2	45.9	47.7	49.3	49.2	49.7	50.6	51.0	51.1	51.8	50.9	50.2	49.6	49.0	48.3	47.5	47.0	47.4
Colorado Sp'ngs, Colo	42.7	41.0	38.9	38.2	37.1	36.8	35.9	36.6	40.2	44.8	47.6	50.3	52.4	54.6	56.2	57.0	57.6	57.2	56.5	55.1	52.2	49.5	47.2	45.3	47.1
Columbus, Ohio	47.3	47.0	46.2	45.4	44.7	44.4	45.0	46.9	49.6	52.3	54.3	56.3	57.9	58.6	58.5	58.6	58.2	57.8	56.0	54.4	52.8	51.1	49.9	48.9	51.8
Denver, Colo	48.1	46.5	44.1	42.7	41.7	41.0	40.0	39.1	40.7	45.6	50.9	54.4	57.0	59.0	60.4	61.4	61.6	61.6	60.8	59.6	57.1	54.8	52.7	50.5	51.3
Des Moines, Iowa	50.5	49.4	49.0	48.1	47.2	46.5	46.0	46.7	48.8	50.9	52.9	54.5	56.1	57.8	58.9	59.3	59.6	59.0	58.2	57.1	55.9	54.4	53.3	52.2	53.0
Detroit, Mich	43.5	42.8	42.4	41.5	40.9	40.3	40.6	43.2	44.9	47.2	49.0	50.3	51.9	52.9	53.0	52.9	52.6	51.9	50.7	48.7	47.2	46.4	45.6	44.7	46.9
Dodge City, Kans	51.7	50.8	49.3	48.3	46.7	45.9	45.3	46.5	50.9	55.1	59.7	63.3	66.8	68.6	70.0	70.9	71.2	70.5	68.2	63.8	59.7	57.0	54.8	53.3	57.8
Duluth, Minn	35.9	36.0	35.7	35.7	35.5	35.3	35.1	35.5	35.9	36.4	37.2	38.2	38.8	39.2	39.5	39.7	39.6	39.8	39.2	38.7	38.0	38.2	37.4	37.1	37.4
Eastport, Me	35.6	35.4	34.9	34.7	34.6	35.0	36.3	37.6	38.9	39.8	40.7	41.9	42.4	42.7	42.8	42.5	41.8	40.6	39.6	38.7	37.6	37.2	36.5	36.2	38.5
El Paso, Tex	63.3	61.7	59.9	58.6	57.4	55.9	54.3	53.3	53.3	59.6	63.9	67.5	70.4	73.1	75.0	76.3	77.1	77.5	77.3	75.9	72.8	69.8	67.7	64.7	66.2
Fort Smith, Ark	60.6	59.4	58.5	57.3	56.4	55.8	54.7	56.0	57.9	61.4	64.4	66.8	69.1	70.4	71.4	72.3	73.0	72.6	71.3	68.9	66.9	65.3	63.5	62.0	63.9
Galveston, Tex	70.0	70.0	69.6	69.5	69.2	69.1	69.0	69.2	69.9	71.0	72.1	72.6	73.0	73.4	73.4	73.4	73.1	72.8	72.1	71.4	71.1	70.9	70.5	70.3	71.1
Grand Haven, Mich	43.0	42.7	42.2	41.6	41.3	41.1	41.4	43.4	45.3	46.5	47.5	48.6	49.2	49.3	49.1	49.3	49.2	48.9	47.8	46.1	45.7	45.0	44.8	44.2	45.5
Havre, Mont	42.3	41.6	40.7	39.6	38.0	37.9	36.7	36.8	39.4	43.2	46.6	49.1	51.6	53.3	54.7	55.3	56.5	56.9	56.3	54.9	51.5	47.4	45.2	43.9	46.6
Helena, Mont	42.5	41.4	41.1	40.2	39.4	39.2	38.6	38.0	39.1	40.8	42.2	44.3	46.6	48.1	50.0	50.8	51.1	51.4	50.8	49.9	47.9	45.9	44.8	43.2	44.5
Huron, S. Dak	42.0	41.1	40.5	40.1	39.4	39.3	39.1	40.6	43.3	46.2	49.1	51.5	53.3	54.9	56.4	57.1	57.3	56.4	55.0	52.6	49.3	47.0	45.0	43.6	47.5
Indianapolis, Ind	50.2	49.4	48.4	47.6	47.4	46.5	46.5	48.7	51.5	54.3	56.8	58.6	59.8	60.7	61.4	62.0	61.7	60.7	58.9	57.1	55.4	54.0	53.0	51.7	54.3
Jacksonville, Fla	63.8	63.4	62.8	61.9	61.2	60.6	61.9	65.1	68.2	70.9	72.5	74.0	74.6	75.2	75.4	75.0	74.1	71.9	69.9	68.2	67.0	66.0	65.3	64.7	68.1
Kansas City, Mo	55.1	53.9	52.9	52.2	51.0	50.0	49.5	49.5	50.5	52.9	55.4	57.8	59.7	61.5	62.8	63.5	64.1	64.4	63.5	62.3	60.3	58.9	57.6	56.4	56.9
Key West, Fla	73.9	73.8	73.6	73.5	73.4	73.3	74.3	75.8	77.4	78.1	79.1	79.4	79.9	79.7	79.6	79.2	78.5	77.1	75.8	75.2	75.0	75.0	74.5	74.3	76.2
Knoxville, Tenn	54.9	54.0	53.3	52.5	51.9	50.9	51.0	52.7	54.7	57.5	59.8	61.4	63.2	65.1	65.9	66.4	66.2	65.0	63.7	62.2	60.1	58.8	57.2	55.9	58.5
Lander, Wyo	38.8	37.6	35.5	35.1	33.7	32.7	32.4	33.2	36.4	41.5	45.7	48.1	51.4	53.0	53.7	54.6	55.6	54.7	54.1	52.0	47.6	45.1	42.6	41.2	44.0
Little Rock, Ark	60.5	59.6	59.0	58.0	57.1	56.2	55.7	56.6	58.7	61.2	63.8	66.0	67.8	69.1	69.8	70.7	70.7	70.6	69.8	67.8	66.2	64.8	63.2	61.7	63.5
Louisville, Ky	53.3	52.5	51.6	50.8	49.9	49.3	49.1	50.6	52.8	56.0	58.6	60.3	61.6	62.9	62.8	63.0	63.4	62.6	61.2	59.7	58.3	57.0	56.0	54.8	56.6
Lynchburg, Va	50.9	50.0	49.3	48.7	48.0	47.7	48.4	51.6	54.4	56.5	59.0	60.2	62.0	63.0	63.8	64.0	63.3	62.3	60.3	58.5	56.5	54.9	53.1	52.0	55.8
Marquette, Mich	37.4	37.4	37.0	36.6	36.2	36.6	37.2	38.8	40.1	41.8	43.0	43.5	44.2	44.7	44.4	44.7	44.7	43.9	43.3	41.0	40.8	40.0	39.4	38.8	40.7
Memphis, Tenn	59.2	58.2	57.4	56.6	55.6	54.8	55.0	56.7	58.3	60.8	62.9	65.4	66.9	68.1	69.3	69.9	70.0	69.3	68.1	66.4	64.4	62.9	61.6	60.5	62.4
Milwaukee, Wis	43.5	42.7	42.2	41.9	41.8	41.4	41.7	43.3	45.2	46.6	47.4	48.2	48.0	47.5	47.9	48.6	48.5	48.0	47.0	45.5	45.4	44.5	44.3	44.2	45.2
Montgomery, Ala	61.7	60.9	60.2	59.3	58.5	57.7	57.8	59.7	62.3	65.4	68.4	70.7	73.0	74.8	75.7	76.2	75.6	74.4	72.2	69.8	67.5	66.2	64.8	63.5	66.5
Moorhead, Minn	40.5	39.9	39.4	38.9	38.3	37.8	38.1	38.8	40.3	41.6	43.0	44.7	46.2	47.5	48.5	49.1	49.5	49.3	48.5	47.0	45.3	44.0	43.3	42.0	43.4
Nantucket, Mass	40.8	40.7	40.4	40.5	40.1	40.5	41.5	42.6	43.6	44.0	45.0	44.7	44.7	44.6	44.0	43.5	42.8	41.9	41.6	41.4	41.2	40.9	40.9	40.9	42.2
Nashville, Tenn	56.4	55.6	54.6	53.5	52.5	51.7	51.9	54.0	57.1	60.0	62.5	64.0	65.7	67.1	67.7	68.1	67.7	67.3	65.9	64.2	62.3	61.1	59.7	58.4	60.4
New Haven, Conn	43.2	43.0	42.4	41.9	41.7	42.0	43.7	46.0	47.7	49.3	50.4	51.8	51.4	51.7	52.0	51.6	50.9	49.4	47.4	46.1	45.3	44.4	44.2	43.8	46.7
New Orleans, La	66.5	66.0	65.7	65.6	65.3	65.0	65.0	66.2	68.4	70.1	70.3	74.2	75.3	75.7	76.1	76.3	76.1	75.4	73.8	70.2	70.0	69.0	68.2	67.3	70.2
New York, N. Y	45.4	45.1	44.5	43.9	43.7	43.7	44.4	45.9	48.1	49.8	51.9	53.4	54.5	54.9	55.0	54.8	54.0	52.8	50.7	49.3	48.6	47.4	46.9	46.1	49.0
Norfolk, Va	51.7	51.4	51.1	50.6	50.3	50.2	51.1	53.4	55.0	56.4	57.9	59.4	60.3	60.6	60.7	60.1	59.4	58.1	56.7	54.8	54.0	53.3	52.7	52.1	55.0
North Platte, Nebr	45.8	44.5	43.5	42.9	41.8	40.9	39.8	41.0	44.1	48.2	51.5	54.9	57.3	59.3	60.8	61.5	61.9	61.1	60.0	57.4	53.5	50.8	49.3	47.8	50.8
Omaha, Nebr																									
Philadelphia, Pa	46.7	46.4	45.8	45.5	45.2	45.2	46.1	48.0	49.7	51.9	53.5	54.8	55.9	56.8	56.5	56.7	56.5	55.4	53.6	51.5	50.1	49.0	47.9	47.2	50.7
Pikes Peak, Colo	12.9	12.5	12.3	12.3	12.1	12.0	12.0	11.8	12.5	13.3	14.7	16.0	17.0	18.4	19.0	19.6	19.8	19.4	18.3	17.1	15.8	14.9	14.3	13.7	15.1
Pittsburg, Pa	48.3	47.4	46.7	46.1	45.6	45.2	45.2	47.0	49.1	51.3	53.1	54.7	55.9	56.8	57.6	57.9	58.1	57.4	56.8	55.0	53.5	52.2	51.0	49.6	51.7
Portland, Oreg	48.3	47.5	46.5	45.8	44.8	44.3	44.0	43.7	43.3	43.8	44.8	46.3	47.8	49.3	51.5	52.9	54.2	54.5	54.5	53.5	52.1	50.8	49.4	48.7	48.7
Rapid City, S. Dak	43.6	43.0	42.3	41.4	41.4	40.6	39.7	40.4	43.5	47.0	49.9	51.6	53.0	54.7	56.7	57.2	57.8	57.2	56.0	53.2	50.4	47.9	46.3	45.1	48.3
Red Bluff, Cal	59.6	57.7	56.5	55.4	54.1	52.9	52.0	51.4	50.4	52.6	56.5	60.5	63.6	65.9	68.3	70.0	71.1	72.1	72.5	72.3	70.5	67.4	64.3	61.6	61.6
Rochester, N. Y	43.2	42.5	41.7	41.2	41.0	41.1	42.0	44.9	47.3	49.2	50.5	51.7	52.7	52.7	53.0	52.5	52.5	51.2	49.8	48.0	47.0	45.7	44.7	44.0	47.1
Roseburg, Oreg	47.8	46.4	45.0	44.2	43.6	42.7	42.3	41.9	41.7	42.8	44.8	47.9	50.6	52.5	54.9	57.1	57.8	58.3	58.4	57.9	56.0	53.5	51.6	49.8	49.6
St. Louis, Mo	54.9	54.3	53.1	52.6	51.9	51.3	51.0	51.8	53.5	55.6	57.8	59.8	61.5	62.3	63.3	64.1	63.7	63.5	62.5	60.6	59.5	58.3	57.2	56.1	57.5
St. Paul, Minn	45.8	45.5	44.8	44.0	43.4	42.9	42.6	43.5	44.1	45.6	47.8	49.4	51.0	52.0	53.5	53.9	54.2	54.2	53.9	52.8	51.4	50.0	48.7	47.7	48.5
Salt Lake City, Utah	45.8	44.9	44.4	43.7	43.3	42.5	42.5	42.4	43.3	45.7	48.4	50.6	51.6	52.7	53.7	53.9	54.2	54.4	54.3	53.4	51.4	49.4	47.0	46.4	48.4
San Diego, Cal	53.9	53.5	52.9	52.6	52.1	51.8	51.6	51.6	51.9	53.9	56.3	58.1	59.5	60.2	60.6	60.8	61.0	60.6	59.9	59.0	57.2	56.3	55.6	55.1	56.1
San Francisco, Cal	51.6	51.0	50.8	50.6	50.2	49.8	49.8	49.5	49.1	50.3	52.0	54.3	56.3	58.1	58.9	59.8	59.7	59.1	57.7	56.6	55.3	54.2	53.1	52.4	53.8
Santa Fe, N. Mex	45.4	45.1	44.1	42.6	41.7	40.7	39.6	39.5	42.9	46.2	48.9	51.2	53.0	54.9	56.0	57.6	58.4	58.6	58.2	56.6	53.8	50.7	48.5	46.8	49.2
Sault Ste. Marie, Mich	37.4	36.6	36.1	35.8	35.1	35.0	35.5	37.0	39.3	41.8	44.6	46.3	47.4	48.0	48.5	48.1	47.4	46.0	44.5	42.7	41.0	40.2	39.4	38.6	41.3
Savannah, Ga	61.3	60.7	60.0	59.4	58.8	58.4	58.7	62.4	65.5	68.4	70.7	72.2	73.2	72.9	73.0	72.2	70.8	69.2	66.9	65.0	64.1	63.4	62.7	62.1	65.5
Seattle, Wash	46.4	45.7	45.1	44.7	44.0	43.5	43.2	42.8	42.5	42.9	44.2	45.4	47.0	48.2	49.4	50.8	51.8	52.3	52.8	52.8	51.5	49.7	48.1	47.2	47.2
Shreveport, La	65.7	64.9	64.1	63.3	62.7	62.0	61.5	62.8	64.3	66.6	68.5	70.9	72.5	73.7	74.8	75.2	75.5	75.2	74.1	71.5	70.1	68.9	67.7	66.8	68.5
Spokane, Wash	45.5	44.8	43.2	42.2	41.3	40.5	39.7	39.6	41.3	44.0	46.7	49.0	51.0	52.0	52.5	53.2	53.4	53.5	53.3	52.0	50.6	48.4	46.9	46.0	46.8
Titusville, Fla	67.0	66.4	65.6	65.1	64.0	63.5	64.9	69.3	71.8	73.5	75.0	75.7	76.2	76.4	75.5	74.7	74.0	72.9	71.6	70.6	69.8	69.4	68.8	68.1	70.4
Toledo, Ohio	45.3	44.6	43.8	43.1	42.7	42.3	43.0	44.6	46.7	48.8	50.9	52.4	53.2	54.3	54.8	54.8	54.8	53.3	51.7	50.2	49.1	48.1	47.3	46.5	48.6
Tucson, Ariz	61.9	59.5	57.1	55.4	54.0	51.8	50.6	49.6	52.9	59.6	65.9	70.6	73.5	75.8	77.6	78.8	79.7	79.9	79.4	77.1	74.4	71.1	67.9	64.9	66.2
Vicksburg, Miss	64.7	63.7	62.8	62.0	61.0	60.3	59.9	60.9	62.9	65.5	68.0	70.0	72.1	73.5	74.7	75.5	75.8	74.6	73.5	71.1	69.6	68.4	67.2	66.0	67.7
Washington, D. C	48.8	47.9	47.3	46.7	46.2	45.8	46.8	49.5	51.5	53.5	55.6	57.1	58.1	59.2	59.7	60.4	59.6	57.9	56.2	54.4	52.9	51.3	50.5	49.2	52.8
Wilmington, N. C	56.6	56.2	55.4	55.1	54.6	54.1	55.3	58.1	60.7	62.4	64.4	65.4	66.2	66.3	66.0	65.0	63.7	61.6	60.3	59.1	58.6	57.7	57.2	56.3	60.3
Winnemucca, Nev	45.6	44.0	42.2	40.9	39.7	38.5	37.5	36.5	36.3	38.7	42.6	46.6	49.9	52.3	54.4	55.6	57.0	58.0	57.5	57.0	55.7	52.6	50.1	47.0	47.3
Yuma, Ariz	66.0	65.0	63.1	61.0	59.2	58.2	57.5	57.4	59.6	64.8	71.3	75.9	79.1	81.6	83.9	85.2	86.4	86.6	86.2	84.5	80.5	76.4	72.1	68.9	72.1

TABLE VI.—*Mean pressure for each hour of seventy-fifth meridian time, April, 1894.*

Stations.	1 a. m.	2 a. m.	3 a. m.	4 a. m.	5 a. m.	6 a. m.	7 a. m.	8 a. m.	9 a. m.	10 a. m.	11 a. m.	Noon.	1 p. m.	2 p. m.	3 p. m.	4 p. m.	5 p. m.	6 p. m.	7 p. m.	8 p. m.	9 p. m.	10 p. m.	11 p. m.	Midnight.	Mean.
Abilene, Tex	28.140	.142	.142	.146	.150	.153	.167	.182	.187	.196	.200	.194	.176	.155	.134	.110	.089	.083	.081	.091	.112	.131	.140	.140	.143
Albany, N. Y	29.943	.940	.940	.941	.946	.956	.968	.968	.968	.965	.954	.941	.929	.919	.913	.913	.917	.924	.935	.949	.958	.963	.963	.962	.945
Alpena, Mich	29.367	.365	.365	.368	.375	.383	.392	.397	.392	.390	.387	.383	.377	.370	.364	.357	.358	.359	.359	.362	.370	.375	.377	.378	.374
Atlanta, Ga	28.889	.886	.887	.888	.892	.903	.921	.930	.935	.942	.938	.926	.909	.890	.873	.859	.852	.854	.858	.867	.879	.888	.889	.890	.893
Augusta, Ga	29.891	.886	.886	.886	.889	.903	.918	.925	.926	.927	.919	.903	.886	.869	.844	.832	.825	.828	.833	.851	.870	.882	.888	.895	.882
Baltimore, Md	29.833	.830	.828	.830	.839	.852	.862	.870	.871	.868	.860	.847	.835	.824	.813	.808	.810	.814	.823	.837	.844	.845	.855	.856	.840
Bismarck, N. Dak ..	28.130	.128	.128	.125	.122	.121	.127	.129	.134	.138	.133	.133	.126	.115	.110	.104	.098	.094	.100	.105	.112	.124	.130	.132	.121
Boston, Mass	29.871	.867	.864	.866	.876	.886	.890	.892	.894	.889	.883	.873	.866	.859	.852	.852	.857	.860	.875	.887	.891	.891	.890	.889	.876
Buffalo, N. Y.....	29.286	.280	.278	.280	.286	.300	.312	.318	.320	.322	.320	.309	.300	.293	.288	.286	.290	.291	.299	.306	.310	.311	.311	.308	.300
Chicago, Ill	29.108	.104	.104	.107	.108	.115	.124	.135	.135	.137	.137	.131	.125	.122	.110	.099	.100	.100	.101	.107	.117	.117	.115	.115	.116
Cincinnati, Ohio ...	29.366	.362	.362	.362	.365	.378	.391	.398	.400	.401	.399	.387	.381	.369	.352	.344	.342	.345	.347	.352	.363	.371	.374	.375	.370
Cleveland, Ohio	29.228	.226	.226	.226	.230	.245	.255	.256	.255	.252	.250	.244	.237	.233	.224	.217	.219	.227	.231	.238	.242	.241	.241	.239	.237
Colorado Sp'gs, Colo	23.975	.981	.979	.977	.978	.981	.985	.992	.996	.994	.988	.980	.964	.945	.934	.922	.901	.896	.904	.917	.932	.951	.965	.970	.959
Columbus, Ohio....	29.123	.115	.114	.112	.115	.125	.136	.142	.139	.142	.143	.131	.122	.111	.101	.096	.095	.096	.105	.115	.126	.131	.132	.134	.121
Denver, Colo	24.710	.712	.710	.705	.701	.701	.707	.712	.718	.717	.714	.712	.701	.685	.672	.659	.646	.640	.644	.647	.660	.679	.696	.704	.690
Des Moines, Iowa ..	29.022	.023	.019	.018	.018	.023	.039	.050	.055	.054	.052	.049	.035	.025	.010	.999	.994	.993	.994	.995	.009	.011	.010	.012	.021
Detroit, Mich	29.246	.244	.241	.242	.242	.253	.260	.262	.264	.263	.257	.255	.245	.239	.230	.229	.228	.227	.236	.245	.256	.257	.259	.258	.247
Dodge City, Kans ..	27.331	.330	.327	.325	.327	.328	.336	.347	.358	.357	.359	.356	.341	.326	.305	.291	.278	.268	.268	.269	.277	.295	.308	.318	.318
Duluth, Minn	29.254	.253	.249	.248	.250	.256	.265	.274	.272	.268	.263	.260	.255	.253	.247	.243	.240	.243	.244	.246	.252	.254	.252	.251	.254
Eastport, Me	29.891	.888	.888	.889	.900	.909	.918	.926	.929	.925	.918	.912	.900	.893	.888	.888	.892	.899	.910	.917	.921	.921	.919	.915	.906
El Paso, Tex	26.164	.167	.168	.167	.171	.177	.188	.202	.218	.225	.225	.221	.208	.188	.167	.143	.120	.107	.101	.102	.110	.129	.149	.157	.166
Galveston, Tex	29.992	.991	.986	.981	.981	.983	.994	.008	.016	.025	.031	.028	.018	.007	.993	.975	.964	.950	.961	.963	.971	.986	.991	.990	.991
Grand Haven, Mich .	29.314	.316	.314	.314	.314	.319	.327	.333	.334	.333	.334	.330	.324	.318	.309	.298	.297	.296	.298	.305	.309	.314	.318	.318	.316
Havre, Mont	27.287	.290	.288	.284	.280	.284	.284	.286	.289	.295	.300	.303	.300	.289	.280	.270	.260	.251	.251	.248	.254	.269	.282	.290	.280
Helena, Mont	25.816	.815	.815	.813	.812	.811	.812	.817	.824	.829	.832	.831	.822	.813	.799	.791	.785	.782	.786	.787	.791	.803	.814	.817	.808
Huron, S. Dak	28.526	.524	.522	.513	.519	.525	.531	.536	.536	.535	.531	.526	.518	.508	.497	.488	.480	.480	.477	.478	.489	.507	.513	.515	.511
Indianapolis, Ind...	29.207	.203	.199	.199	.205	.213	.222	.232	.236	.235	.233	.225	.218	.206	.195	.184	.181	.183	.187	.192	.200	.206	.206	.208	.207
Jacksonville, Fla...	30.049	.044	.039	.040	.048	.060	.074	.080	.083	.084	.079	.064	.046	.029	.013	.003	.998	.003	.015	.030	.044	.052	.055	.053	.045
Kansas City, Mo ...	28.947	.945	.944	.945	.948	.954	.970	.978	.984	.988	.989	.981	.965	.953	.938	.923	.907	.900	.900	.905	.919	.926	.936	.940	.945
Key West, Fla	30.073	.063	.054	.051	.056	.067	.085	.095	.102	.107	.104	.096	.084	.069	.053	.039	.036	.039	.048	.063	.074	.080	.080	.077	.071
Knoxville, Tenn ...	29.028	.022	.020	.020	.021	.031	.045	.053	.057	.063	.059	.046	.030	.019	.000	.988	.987	.992	.997	.008	.023	.030	.032	.035	.025
Little Rock, Ark ...	29.700	.697	.690	.691	.696	.701	.724	.730	.741	.748	.746	.745	.726	.715	.692	.675	.663	.659	.657	.663	.677	.694	.698	.700	.702
Louisville, Ky	29.468	.462	.462	.466	.472	.480	.497	.508	.511	.516	.513	.504	.490	.477	.461	.453	.449	.449	.449	.456	.465	.471	.471	.473	.476
Lynchburg, Va	29.333	.334	.335	.337	.346	.358	.373	.374	.373	.369	.358	.345	.325	.310	.292	.285	.285	.288	.305	.320	.335	.338	.341	.345	.334
Marquette, Mich ...	29.211	.207	.205	.204	.206	.212	.220	.224	.218	.222	.226	.222	.218	.213	.207	.202	.202	.202	.202	.206	.214	.217	.216	.215	.212
Memphis, Tenn	29.692	.692	.692	.692	.700	.708	.720	.736	.746	.752	.751	.742	.724	.714	.693	.680	.673	.666	.665	.667	.681	.692	.696	.696	.703
Milwaukee, Wis	29.262	.264	.268	.271	.276	.284	.294	.299	.299	.297	.297	.297	.288	.279	.271	.264	.262	.258	.257	.260	.264	.264	.263	.261	.275
Moorhead, Minn ...	28.919	.920	.915	.910	.912	.914	.921	.921	.915	.915	.919	.921	.916	.908	.901	.897	.893	.891	.894	.893	.901	.909	.910	.912	.909
Nantucket, Mass ...	29.992	.986	.980	.977	.987	.997	.007	.009	.008	.011	.008	.999	.994	.988	.982	.983	.985	.991	.999	.005	.011	.013	.010	.008	.997
Nashville, Tenn	29.448	.445	.442	.447	.452	.464	.483	.491	.492	.496	.492	.486	.466	.449	.433	.423	.420	.420	.426	.433	.446	.448	.452	.455	.455
New Haven, Conn ..	29.890	.884	.882	.883	.887	.899	.906	.905	.903	.898	.889	.880	.873	.864	.856	.857	.864	.871	.884	.900	.908	.909	.908	.910	.888
New Orleans, La ...	30.004	.998	.991	.988	.990	.000	.015	.032	.041	.046	.049	.041	.030	.016	.001	.988	.978	.972	.974	.974	.987	.997	.005	.006	.005
New York, N. Y	29.835	.830	.827	.826	.828	.834	.842	.844	.845	.846	.838	.830	.822	.812	.803	.805	.809	.813	.824	.840	.848	.854	.855	.855	.832
Norfolk, Va	29.996	.987	.984	.986	.994	.009	.022	.025	.028	.032	.026	.016	.999	.986	.972	.970	.967	.974	.985	.998	.009	.012	.019	.014	.000
Omaha, Neb	28.770	.769	.768	.767	.771	.775	.785	.792	.799	.795	.793	.788	.779	.763	.750	.733	.726	.720	.720	.720	.730	.747	.752	.757	.761
Philadelphia, Pa ...	29.912	.906	.902	.901	.908	.920	.929	.935	.938	.937	.928	.918	.907	.898	.889	.886	.887	.893	.902	.915	.924	.926	.931	.934	.914
Pikes Peak, Colo ...	17.667	.672	.664	.652	.647	.643	.634	.645	.659	.672	.679	.686	.689	.689	.693	.694	.693	.691	.691	.692	.689	.692	.691	.691	.676
Pittsburg, Pa	29.173	.170	.167	.167	.169	.178	.188	.195	.196	.194	.187	.176	.166	.156	.147	.137	.138	.143	.148	.159	.170	.175	.178	.182	.169
Portland, Oreg	29.972	.979	.986	.985	.983	.982	.981	.983	.985	.992	.996	.998	.998	.991	.979	.969	.959	.951	.944	.944	.944	.949	.964	.977	.975
Rochester, N. Y	29.499	.496	.492	.495	.499	.509	.522	.528	.528	.532	.528	.524	.515	.508	.496	.492	.494	.498	.502	.506	.516	.518	.519	.520	.510
Roseburg, Oreg	29.565	.571	.576	.577	.576	.576	.575	.572	.574	.577	.579	.579	.577	.570	.556	.548	.541	.532	.526	.526	.525	.536	.551	.566	.561
St. Louis, Mo	29.394	.389	.386	.388	.390	.394	.408	.417	.418	.424	.426	.419	.405	.398	.383	.369	.365	.362	.361	.366	.381	.391	.393	.391	.392
St. Paul, Minn	29.028	.027	.027	.028	.032	.034	.041	.050	.055	.056	.056	.055	.046	.039	.028	.018	.011	.008	.006	.008	.014	.024	.024	.024	.031
Salt Lake City, Utah	25.687	.684	.687	.679	.676	.676	.678	.683	.695	.703	.709	.714	.712	.706	.694	.688	.676	.668	.665	.665	.665	.674	.682	.683	.685
San Diego, Cal	29.975	.973	.966	.958	.950	.946	.946	.949	.962	.970	.974	.978	.982	.977	.963	.956	.946	.937	.935	.936	.943	.952	.963	.969	.959
San Francisco, Cal..	29.957	.961	.961	.956	.950	.947	.945	.946	.958	.972	.978	.985	.989	.983	.972	.961	.949	.934	.924	.919	.918	.923	.938	.948	.953
Santa Fe, N. Mex ..	23.226	.227	.226	.225	.224	.223	.225	.235	.239	.245	.248	.251	.247	.238	.225	.213	.200	.192	.187	.189	.193	.206	.217	.221	.222
S'lt Ste. Marie, Mich	29.313	.315	.319	.324	.327	.339	.349	.353	.352	.347	.338	.333	.322	.316	.311	.307	.302	.306	.303	.308	.315	.318	.319	.324	.323
Savannah, Ga	29.987	.983	.978	.979	.988	.004	.021	.028	.033	.033	.024	.008	.991	.975	.958	.948	.947	.948	.959	.970	.980	.986	.989	.989	.988
Seattle, Wash	29.956	.961	.963	.967	.963	.962	.963	.963	.966	.970	.974	.974	.972	.965	.960	.952	.946	.939	.937	.931	.929	.937	.947	.958	.956
Spokane, Wash	27.975	.977	.985	.988	.988	.994	.998	.006	.017	.026	.026	.026	.013	.014	.008	.004	.994	.985	.977	.974	.967	.969	.973	.976	.994
Toledo, Ohio	29.285	.278	.278	.278	.284	.293	.302	.308	.304	.306	.303	.295	.289	.282	.270	.265	.266	.270	.276	.283	.294	.298	.297	.296	.288
Vicksburg, Miss ...	29.763	.762	.756	.757	.758	.763	.780	.796	.805	.809	.815	.807	.794	.780	.766	.747	.737	.734	.734	.738	.743	.752	.756	.759	.767
Washington, D. C ..	29.935	.928	.924	.920	.931	.947	.955	.958	.962	.963	.958	.948	.938	.923	.912	.906	.908	.911	.919	.933	.943	.944	.949	.954	.936
Wilmington, N. C ..	29.995	.991	.989	.992	.004	.017	.031	.035	.041	.039	.030	.017	.000	.987	.972	.967	.969	.975	.987	.997	.008	.012	.010	.007	.003
Yuma, Ariz	29.771	.774	.775	.774	.771	.773	.774	.783	.803	.814	.822	.824	.819	.808	.784	.764	.741	.718	.707	.706	.708	.721	.744	.760	.768

TABLE VII.—*Average wind movement for each hour of seventy-fifth meridian time, April, 1894.*

Stations.	1 a. m.	2 a. m.	3 a. m.	4 a. m.	5 a. m.	6 a. m.	7 a. m.	8 a. m.	9 a. m.	10 a. m.	11 a. m.	Noon.	1 p. m.	2 p. m.	3 p. m.	4 p. m.	5 p. m.	6 p. m.	7 p. m.	8 p. m.	9 p. m.	10 p. m.	11 p. m.	Midnight.	Mean.
Abilene, Tex	9.6	10.1	10.2	9.9	9.8	9.3	9.3	9.7	11.1	13.9	15.9	16.3	15.7	14.8	14.0	14.0	14.6	14.6	13.9	13.2	10.6	10.0	9.1	9.8	12.1
Albany, N. Y	7.1	6.6	6.8	6.3	6.2	6.8	7.4	9.2	10.4	11.2	11.6	11.3	11.2	11.3	12.0	12.5	12.1	12.0	10.5	9.8	9.3	8.1	7.3	7.1	9.3
Alpena, Mich	8.9	9.0	9.2	8.7	8.3	8.5	8.2	8.9	10.3	11.1	12.7	13.1	13.6	13.9	13.6	13.4	13.4	11.6	10.3	8.4	8.3	8.2	8.3	8.2	10.3
Amarillo, Tex	18.8	18.7	18.8	18.9	17.7	17.6	17.2	15.8	16.3	18.2	19.1	18.0	18.5	18.9	19.8	19.8	20.7	20.8	21.6	21.2	18.0	18.6	18.4	18.3	18.7
Atlanta, Ga	10.1	9.8	9.5	9.5	9.8	10.1	9.5	10.0	10.8	11.2	11.8	11.7	11.8	11.9	12.7	12.9	12.7	12.7	11.2	9.1	10.1	10.6	10.3	10.4	10.8
Atlantic City, N. J	11.4	11.6	11.8	11.8	11.7	11.7	12.2	13.1	14.3	14.1	14.5	15.6	15.4	15.6	15.5	15.1	15.0	14.0	13.1	12.8	12.7	11.9	11.9	10.9	13.2
Augusta, Ga	4.6	4.8	4.6	5.0	4.3	3.6	4.1	4.8	5.7	7.2	8.2	9.7	10.5	10.0	10.4	10.5	10.0	9.1	7.5	5.3	4.9	5.5	5.4	5.4	6.7
Baker City, Oreg	4.5	4.4	4.9	4.8	4.7	5.6	5.1	4.9	5.1	6.0	5.6	4.7	5.6	6.1	6.7	7.9	7.6	7.9	7.9	7.8	7.1	6.1	5.1	4.8	5.9
Baltimore, Md	6.2	6.7	6.8	6.6	6.1	6.6	6.7	8.6	9.6	10.0	10.5	11.5	11.7	12.5	12.9	12.5	12.0	11.0	8.7	7.2	6.7	6.8	7.3	6.5	8.8
Bismarck, N. Dak	12.7	12.7	12.2	11.7	11.8	12.1	11.9	11.2	12.8	14.0	15.4	15.8	16.6	17.7	18.4	18.0	17.6	17.3	15.8	14.4	12.7	12.6	12.7	13.2	14.2
Block Island, R. I	17.9	18.4	18.9	18.2	17.0	17.2	18.8	19.0	19.0	18.2	19.4	19.7	20.6	21.7	23.0	22.0	21.1	19.9	19.4	19.3	17.9	17.9	17.4	17.5	19.1
Boston, Mass	12.4	12.5	12.0	12.2	12.3	11.6	12.4	12.9	13.6	14.6	15.1	15.3	15.3	15.4	14.7	14.7	15.4	15.0	13.7	13.6	13.2	13.0	12.9	13.0	13.6
Buffalo, N. Y	8.2	8.1	8.4	8.5	7.9	7.8	8.2	8.2	9.1	9.5	10.5	10.3	11.0	10.2	10.1	10.1	10.4	9.8	9.0	7.9	7.0	7.7	7.9	8.1	8.9
Cairo, Ill	7.3	7.0	7.2	7.1	6.8	7.3	7.6	7.9	9.2	9.9	10.3	11.1	12.2	11.8	12.6	12.7	12.4	11.9	10.7	9.0	7.9	8.2	7.5	7.4	9.3
Cape Henry, Va	12.7	12.7	13.3	13.6	13.7	13.8	14.9	15.1	16.5	16.3	16.1	16.5	16.2	16.8	16.4	16.2	15.2	14.6	13.4	13.8	14.4	13.5	13.0	12.6	14.6
Charleston, S. C	7.4	6.7	6.2	6.2	5.5	5.6	6.2	7.6	9.4	10.3	11.2	11.7	12.9	13.9	14.3	14.3	13.4	11.8	10.3	8.8	8.4	8.4	7.2	7.5	9.4
Charlotte, N. C	7.5	7.0	7.1	6.8	6.4	5.7	6.0	6.7	8.3	9.4	9.7	10.0	10.1	10.1	9.9	9.5	9.3	9.0	7.4	6.8	7.0	8.0	7.8	7.9	8.1
Chattanooga, Tenn	5.7	5.8	5.8	5.2	4.8	4.9	5.1	6.0	7.4	8.5	9.0	10.0	10.7	12.2	11.3	11.0	10.5	10.5	9.2	8.3	7.2	6.9	5.9	4.5	7.8
Cheyenne, Wyo	10.5	10.0	9.7	10.1	10.6	10.6	10.7	11.3	11.0	13.7	17.5	17.2	17.4	18.8	18.9	19.9	19.6	19.8	19.7	18.1	15.5	13.3	11.9	11.6	14.5
Chicago, Ill	11.2	11.0	11.5	10.7	10.5	11.2	11.0	12.6	13.5	14.5	14.3	13.6	14.9	15.1	15.7	16.7	17.1	16.2	15.4	14.2	13.9	13.4	13.7	12.6	13.5
Cincinnati, Ohio	6.2	6.2	6.0	5.5	5.4	5.8	5.7	6.2	7.7	9.0	9.6	9.9	10.2	10.5	10.2	10.2	10.8	10.6	9.1	7.6	6.8	6.4	6.9	5.7	7.8
Cleveland, Ohio	9.9	10.6	10.2	10.5	10.3	10.0	10.0	10.6	11.3	11.3	12.3	12.5	12.4	12.9	12.5	13.3	12.9	11.6	10.0	9.3	9.3	8.8	9.4	9.8	10.9
Colorado Spr'gs, Colo.	8.0	8.1	9.1	8.7	8.7	8.6	8.9	8.8	9.0	8.8	11.5	13.7	16.2	18.4	19.1	19.5	17.7	17.5	17.0	15.6	12.2	9.6	8.7	8.5	12.2
Columbia, Mo	8.0	7.7	7.0	7.4	7.4	7.4	6.9	7.5	9.4	10.6	11.1	10.9	11.2	12.0	12.1	12.3	11.5	11.1	9.6	7.7	7.3	8.0	7.6	8.2	9.2
Columbus, Ohio	8.7	8.8	8.7	8.4	8.2	8.2	7.7	8.8	9.9	10.0	11.9	12.5	13.9	14.1	14.2	14.0	13.1	11.6	10.4	10.0	9.9	9.5	9.3	9.2	10.4
Concordia, Kans	8.1	9.4	8.3	8.4	8.5	8.2	8.6	8.7	10.2	11.2	12.5	12.5	12.3	13.4	13.8	13.7	14.1	14.0	13.4	10.8	8.4	8.0	8.4	8.4	10.6
Corpus Christi, Tex	14.8	14.4	13.5	13.6	13.1	12.3	12.6	11.9	11.7	14.2	14.7	15.7	16.7	17.7	18.9	19.5	19.8	19.9	19.9	18.6	18.4	17.6	17.5	16.5	16.0
Davenport, Iowa	10.0	9.9	9.6	9.1	8.1	8.7	9.5	9.8	11.2	12.7	12.8	13.3	13.4	13.3	14.4	14.5	13.6	14.6	13.2	10.0	9.8	9.5	9.5	10.0	11.3
Denver, Colo	8.2	7.3	7.8	7.3	6.9	6.9	6.8	6.8	7.0	6.9	7.9	10.0	9.8	10.3	11.2	12.3	12.6	12.3	12.0	11.5	10.2	9.0	8.5	9.2	9.1
Des Moines, Iowa	8.6	8.2	7.9	7.5	7.2	7.1	7.8	8.4	10.1	12.3	12.3	12.2	13.6	13.5	13.2	13.3	13.2	13.2	12.0	10.7	9.7	9.1	9.2	9.0	10.4
Detroit, Mich	9.3	9.2	9.1	8.9	8.8	8.2	8.7	9.4	9.7	10.6	11.4	11.9	11.9	12.7	12.6	12.4	11.6	11.4	10.7	10.1	9.4	9.1	8.8	9.5	10.2
Dodge City, Kans	13.2	13.4	13.1	12.7	11.5	10.6	9.9	9.5	11.5	14.5	16.6	17.5	18.3	18.4	19.7	19.6	19.6	19.4	18.9	16.6	12.8	12.2	13.5	13.5	14.9
Dubuque, Iowa	5.5	5.2	4.8	4.8	4.5	4.4	5.0	5.8	6.8	7.5	8.4	8.0	9.1	8.8	9.2	9.3	9.4	8.8	7.9	6.2	5.9	5.0	4.8	5.1	6.7
Duluth, Minn	6.0	5.3	5.3	6.1	5.7	5.6	6.0	6.2	7.0	7.5	7.4	7.4	7.8	7.9	8.3	8.4	8.1	7.8	7.2	7.3	6.8	6.3	5.6	5.6	6.8
Eastport, Me	12.4	12.2	11.7	11.2	11.8	12.6	12.7	13.1	13.3	13.6	14.7	15.2	15.4	15.8	16.1	16.0	15.4	14.7	12.8	13.1	13.1	13.2	13.1	13.2	13.6
El Paso, Tex	11.0	12.0	11.1	11.3	11.3	10.5	10.4	11.0	10.1	10.1	11.2	11.1	11.8	12.7	14.0	14.1	14.9	15.3	15.7	14.9	12.0	7.8	10.1	10.0	11.9
Erie, Pa	9.4	10.0	10.1	10.3	9.5	9.4	9.5	9.3	9.6	10.9	11.6	12.2	11.9	12.0	11.6	12.2	10.9	10.2	9.2	8.5	8.3	9.4	9.3	8.2	10.1
Eureka, Cal	[a]8.8	[a]7.8	[a]6.1	[a]5.5	[a]5.8	[a]4.8	[a]4.4	[a]4.5	[a]4.7	[a]4.9	[a]5.2	[a]6.5	[b]7.3	[b]9.7	[b]11.0	[b]12.0	[b]12.5	[b]13.6	[b]13.5	[b]12.9	[b]12.0	[b]10.5	[b]9.8	[b]9.7	8.2
Fort Canby, Wash	14.5	14.4	13.4	13.1	13.1	13.5	14.0	14.7	15.2	16.3	16.5	15.9	15.9	16.2	16.6	15.0	15.0	14.5	13.8	14.1	13.3	13.5	13.4	12.8	14.5
Fort Smith, Ark	6.2	6.4	6.2	7.0	7.0	6.8	7.0	6.9	8.2	9.0	9.0	8.7	9.2	10.2	9.9	10.6	10.7	10.3	8.6	8.1	7.6	7.2	6.7	6.7	8.1
Fresno, Cal	8.9	8.4	7.8	7.7	7.0	6.3	6.1	5.6	5.2	5.3	6.6	7.3	7.6	6.7	7.0	7.7	7.3	8.6	9.6	10.0	9.5	8.9	8.7	9.1	7.9
Galveston, Tex	11.6	10.9	10.7	10.8	10.4	10.0	10.1	10.5	11.1	11.9	12.3	12.7	13.6	13.1	13.3	13.1	13.2	13.0	12.6	11.4	11.9	12.4	12.9	12.3	11.9
Grand Haven, Mich	10.0	9.9	9.1	8.6	8.8	8.9	9.6	9.9	11.2	12.6	12.6	12.4	12.4	12.1	12.7	12.8	12.2	11.4	9.9	9.2	8.7	8.4	8.5	8.5	10.4
Green Bay, Wis	7.8	7.4	7.1	7.2	7.9	8.0	7.7	8.3	9.0	9.8	9.8	10.2	10.4	11.1	10.8	10.9	10.5	10.3	9.6	8.8	8.8	8.4	8.1	8.1	9.0
Hannibal, Mo	9.2	9.1	8.6	8.6	7.9	8.2	8.4	8.9	10.7	12.2	13.6	13.9	14.9	14.3	14.6	15.1	14.9	13.0	12.4	11.6	10.0	9.6	9.8	9.5	11.2
Harrisburg, Pa	6.9	6.0	6.0	5.4	5.2	5.4	6.1	7.6	8.5	9.0	9.3	9.8	10.2	10.5	10.8	10.8	10.2	9.2	9.0	8.1	8.0	7.8	7.2	7.5	8.1
Hatteras, N. C	14.0	14.0	14.4	14.6	13.9	13.5	14.5	15.3	15.3	15.5	15.7	15.4	16.6	17.1	16.4	16.6	15.9	14.6	14.0	13.8	13.4	13.4	13.4	12.7	14.8
Havre, Mont	6.6	7.6	7.9	8.0	8.0	7.8	7.7	7.5	8.2	9.2	11.5	13.8	14.0	14.8	15.2	15.8	15.2	14.8	14.1	12.6	10.5	8.2	7.4	7.8	10.6
Helena, Mont	9.6	10.1	9.6	9.3	8.6	7.5	7.0	8.1	8.4	8.1	9.2	9.8	9.8	10.8	11.7	11.9	12.9	13.4	12.1	11.4	9.9	9.8	8.6	9.0	9.8
Huron, S. Dak	14.4	14.8	14.9	15.3	14.9	14.2	13.3	13.3	15.1	17.3	18.6	19.2	19.8	20.1	20.3	20.9	21.0	19.6	18.7	16.3	13.9	14.4	15.0	14.5	16.7
Idaho Falls, Idaho	9.8	9.3	8.7	8.6	8.2	8.9	8.5	8.0	8.1	8.0	8.8	8.7	10.1	11.0	11.3	12.0	12.0	12.7	13.2	13.0	12.2	11.0	10.1	9.9	10.1
Indianapolis, Ind	5.9	5.6	5.5	5.2	5.5	4.9	5.2	5.6	6.7	7.7	8.6	8.8	9.7	8.9	9.3	9.7	9.2	8.0	7.9	6.3	6.5	6.2	5.5	5.6	7.0
Jacksonville, Fla	6.3	5.7	5.4	5.0	4.8	5.4	5.2	5.8	6.8	7.9	8.4	9.8	10.8	11.0	11.3	11.7	11.9	11.3	9.6	8.1	7.2	7.4	6.3	6.4	7.9
Jupiter, Fla	8.3	7.7	7.3	7.4	6.8	6.2	6.3	7.1	8.9	10.4	11.1	12.2	12.5	12.9	13.1	13.2	12.4	11.4	11.1	10.3	10.2	10.5	9.1	8.5	9.8
Kansas City, Mo	8.4	8.5	8.1	8.2	8.6	8.4	8.3	9.1	10.0	10.7	11.2	11.4	12.4	12.2	11.9	12.1	12.0	11.9	11.5	9.7	8.8	8.8	8.1	8.2	9.9
Keokuk, Iowa	8.0	8.1	8.3	8.1	7.6	7.2	7.4	8.5	10.1	10.7	11.1	11.4	11.8	12.9	12.5	12.6	11.9	11.2	10.2	9.9	8.8	8.6	8.3	8.1	9.7
Key West, Fla	8.0	7.6	7.0	7.1	6.8	6.7	6.9	7.5	8.2	8.5	8.7	8.8	8.8	9.3	9.1	8.6	8.4	8.3	7.7	7.9	8.8	9.2	8.6	8.3	8.1
Kittyhawk, N. C	13.5	13.5	13.0	12.6	13.4	14.4	14.4	15.4	16.6	17.3	17.2	16.8	17.4	18.0	18.0	19.2	18.9	17.0	14.9	14.0	13.2	13.6	13.7	13.8	15.4
Knoxville, Tenn	4.3	4.3	3.7	3.8	2.7	2.5	3.0	3.5	4.8	6.0	7.5	8.0	7.9	8.8	8.6	9.3	9.0	8.7	6.9	5.9	5.4	4.4	3.6	3.5	5.6
La Crosse, Wis	7.4	8.1	8.6	8.0	7.7	7.5	7.3	7.2	7.7	8.7	9.6	10.0	10.1	10.2	10.8	10.9	11.2	10.7	9.6	8.9	8.5	8.2	7.3	7.5	8.8
Lander, Wyo	5.5	4.8	3.9	3.5	3.9	3.1	3.3	4.0	3.6	4.2	5.0	5.3	6.3	7.0	8.5	10.4	10.4	10.3	9.7	10.8	8.8	6.4	6.6	5.7	6.3
Lexington, Ky	11.6	11.0	11.2	11.2	11.5	12.1	11.6	11.6	12.3	13.9	14.0	14.6	14.6	14.7	15.3	14.1	14.4	13.9	11.9	10.1	10.9	11.0	11.8	11.5	12.5
Little Rock, Ark	5.1	5.0	5.4	5.6	5.6	5.4	5.3	6.0	7.7	8.3	9.0	9.4	10.4	10.8	12.1	11.5	11.3	10.7	9.6	7.7	6.6	7.3	6.7	6.3	7.9
Los Angeles, Cal	2.8	2.5	2.5	2.4	2.4	2.3	2.5	2.9	2.8	2.7	3.1	3.3	3.7	4.1	5.6	7.3	7.7	8.3	7.6	7.2	6.2	4.6	3.3	3.1	4.2
Louisville, Ky	5.6	5.8	6.2	6.7	6.6	7.0	7.0	7.4	8.3	8.9	10.4	10.7	11.9	12.0	11.9	11.4	11.2	10.2	8.8	7.4	6.8	6.2	6.3	5.6	8.3
Lynchburg, Va	3.2	3.4	3.2	3.2	3.3	3.3	3.4	4.4	6.3	6.5	7.0	7.2	7.6	7.9	8.0	8.7	8.2	7.7	6.8	5.3	4.7	4.7	4.0	3.7	5.5
Marquette, Mich	7.9	8.2	8.5	8.9	8.5	8.3	9.2	9.6	10.9	11.9	12.2	12.5	12.6	13.6	12.8	12.1	11.1	10.5	8.8	8.2	8.3	7.8	7.2	7.4	9.9
Memphis, Tenn	7.3	7.4	7.0	6.7	6.7	7.0	7.2	7.7	8.0	8.7	9.2	9.7	9.9	9.5	9.5	9.4	9.0	9.3	8.6	6.9	6.4	7.2	7.4	7.8	8.1
Meridian, Miss	4.6	4.2	3.6	3.9	4.3	4.0	3.8	4.7	6.1	7.1	7.9	8.9	8.9	8.9	9.5	9.5	9.5	9.0	6.8	5.2	4.1	4.3	4.4	4.3	6.2
Miles City, Mont	6.9	7.8	7.9	7.7	7.0	6.2	6.2	6.1	7.5	8.9	9.9	9.3	9.0	9.5	10.5	11.5	12.2	11.3	11.0	9.2	8.8	7.9	7.3	7.0	8.6
Milwaukee, Wis	9.0	9.5	9.2	8.9	8.9	9.0	8.5	9.7	10.2	11.1	11.3	11.0	11.6	12.0	12.2	11.5	11.8	11.0	10.4	8.6	7.7	8.4	8.3	8.3	9.9
Mobile, Ala	6.1	5.4	6.2	5.9	5.7	5.8	5.6	6.5	7.4	8.6	9.5	11.0	12.3	13.2	13.5	13.7	12.7	11.8	9.1	7.7	6.8	6.8	7.0	6.9	8.6
Montgomery, Ala	5.3	4.5	4.0	3.3	3.4	3.4	3.9	4.8	6.5	7.5	7.9	8.3	7.9	7.8	9.2	9.2	8.9	8.5	7.2	6.3	5.6	5.2	6.1	5.6	6.3
Moorhead, Minn	11.0	11.0	10.7	10.1	10.4	10.0	10.1	10.1	11.6	13.2	13.3	14.1	14.4	13.8	13.9	14.3	14.1	13.7	12.4	11.4	11.1	11.5	11.3	12.2	12.1
Nantucket, Mass	15.5	15.1	15.6	15.6	15.8	16.6	16.5	16.4	16.5	16.9	16.4	16.0	16.9	15.6	16.2	16.0	16.0	15.8	15.8	15.2	15.2	14.5	14.9	15.6	15.9
Nashville, Tenn	4.1	3.6	3.8	4.0	3.6	3.6	3.5	4.3	5.7	6.8	8.0	7.9	8.5	8.2	8.5	8.8	8.5	7.7	6.7	5.9	5.4	5.6	5.0	4.6	5.9
New Haven, Conn	8.2	8.4	8.6	8.6	8.7	8.6	9.3	10.6	11.3	12.7	12.9	12.7	14.4	14.4	14.7	14.5	14.0	12.5	11.5	10.1	9.2	8.3	8.1	7.8	10.8
New London, Conn	6.8	6.8	6.6	6.9	6.7	7.2	7.6	9.2	9.8	11.2	11.5	11.5	12.1	13.0	12.7	13.2	11.3	10.2	8.5	7.7	7.9	8.0	7.5	7.2	9.2
New Orleans, La	6.5	6.2	5.9	5.6	6.0	6.2	5.9	6.4	7.6	9.9	11.0	11.0	11.0	11.3	11.7	11.4	10.4	10.0	9.1	8.0	7.2	6.7	6.5	6.3	8.2
New York, N. Y	10.0	9.7	9.3	10.1	10.3	10.4	10.5	10.5	10.5	11.4	12.0	13.0	13.2	13.0	13.1	13.1	13.2	12.0	11.1	11.6	11.7	9.9	10.4	10.5	11.3
Norfolk, Va	8.8	8.7	8.2	8.0	8.4	8.5	8.9	9.1	10.6	11.6	11.9	11.7	12.5	12.9	12.9	12.6	12.2	11.7	9.9	8.8	8.7	8.5	8.1	8.9	10.1
Northfield, Vt	8.4	8.1	8.1	7.4	7.9	8.3	7.9	9.1	10.6	13.0	14.0	14.4	14.7	14.3	13.8	13.6	13.6	12.6	9.4	8.6	8.1	7.8	8.1	7.9	10.4
North Platte, Nebr	10.8	10.8	10.4	10.5	10.7	9.1	8.9	8.7	9.8	12.7	14.2	13.8	14.8	16.8	17.8	18.1	17.7	16.8	16.3	17.0	14.9	13.5	12.5	13.3	13.3
Oklahoma, Okla	10.3	10.3	10.0	8.8	8.3	8.1	9.1	9.7	10.0	13.3	14.5	14.7	14.6	14.9	14.7	14.3	14.3	13.6	12.6	10.9	9.0	9.8	10.3	10.6	11.5
Olympia, Wash	5.3	4.7	5.0	4.1	4.6	4.4	4.5	4.5	4.9	4.8	5.6	7.4	8.3	7.9	8.5	8.7	9.1	8.7	8.8	8.1	7.2	6.3	5.4	5.2	6.3

TABLE VII.—*Average wind movement, etc.*—Continued.

Stations.	1 a. m.	2 a. m.	3 a. m.	4 a. m.	5 a. m.	6 a. m.	7 a. m.	8 a. m.	9 a. m.	10 a. m.	11 a. m.	Noon.	1 p. m.	2 p. m.	3 p. m.	4 p. m.	5 p. m.	6 p. m.	7 p. m.	8 p. m.	9 p. m.	10 p. m.	11 p. m.	Midnight.	Mean.
Omaha, Nebr	8.7	8.7	8.9	8.2	8.5	8.2	8.1	8.2	9.2	10.7	11.8	12.0	12.4	11.9	11.8	11.5	11.2	10.9	10.4	8.9	8.5	8.0	8.0	8.4	9.7
Oswego, N. Y	8.2	8.7	8.9	8.9	9.3	9.6	9.2	10.3	10.4	11.1	11.4	11.6	11.7	11.6	11.1	11.4	11.3	10.3	9.4	9.0	9.2	9.1	8.8	8.9	10.0
Palestine, Tex	6.7	6.1	6.2	6.1	5.9	6.1	5.9	5.9	6.7	7.7	9.0	9.0	8.8	9.5	10.1	10.3	10.0	9.7	9.1	7.4	6.2	6.7	7.1	6.8	7.6
Parkersburg, W. Va	4.4	4.6	4.5	4.3	4.3	4.9	4.2	4.9	6.1	7.1	7.6	8.2	7.6	8.1	8.4	8.4	8.4	8.0	6.5	5.3	4.9	5.4	4.8	4.5	6.1
Pensacola, Fla	8.4	8.0	7.4	7.5	7.6	8.3	8.5	8.4	9.2	10.7	11.8	12.1	11.9	12.8	12.6	13.1	13.4	12.9	11.0	9.3	8.3	8.1	8.4	8.1	9.9
Philadelphia, Pa	10.1	9.8	9.9	9.6	9.3	9.5	10.2	11.5	12.7	12.9	14.0	13.6	13.8	14.3	15.1	14.6	14.5	13.2	12.6	12.3	12.4	12.4	12.1	10.9	12.1
Pierre, S. Dak	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Pikes Peak, Colo	30.0	30.3	31.4	33.2	34.0	32.6	30.8	31.1	28.9	25.5	24.6	22.2	21.3	19.2	19.2	19.5	18.8	18.4	19.2	20.4	22.7	24.0	25.8	30.0	25.5
Pittsburg, Pa	5.9	5.2	5.5	5.2	4.8	5.4	5.5	5.7	6.7	7.5	7.9	8.4	9.6	9.3	9.0	9.0	8.5	7.7	7.1	6.5	6.0	5.9	5.6	6.1	6.8
Port Angeles, Wash	5.9	6.1	5.5	6.0	5.6	5.7	5.4	5.7	5.6	4.7	4.3	4.9	6.3	7.1	7.7	8.4	8.6	9.2	9.4	8.4	8.3	6.9	6.1	6.0	6.6
Port Huron, Mich	9.3	9.3	9.3	9.7	9.8	9.6	9.4	10.3	11.6	12.4	13.2	14.3	14.9	14.1	14.1	14.3	13.3	12.4	10.8	9.5	9.2	9.0	8.5	8.6	11.1
Portland, Me	8.1	8.4	8.1	8.2	8.3	7.8	8.1	9.6	10.8	11.4	11.8	11.7	11.6	11.7	12.3	11.8	11.4	9.8	8.5	7.6	7.3	7.7	7.9	7.6	9.5
Portland, Oreg	10.1	8.9	9.1	8.5	8.0	7.8	7.6	8.4	7.9	7.8	8.4	8.2	9.0	10.0	10.3	10.0	10.0	10.4	11.0	10.0	9.2	8.7	8.9	9.5	9.1
Pueblo, Colo	6.6	6.6	6.5	6.5	6.0	5.3	6.7	7.1	6.5	7.2	9.6	10.4	11.9	13.7	14.1	14.9	14.2	14.2	14.3	14.8	11.8	10.4	8.5	7.6	9.8
Raleigh, N. C	6.4	6.1	6.2	6.0	5.8	5.2	5.5	6.9	8.2	9.2	9.3	9.4	9.8	10.5	10.3	10.3	9.3	7.8	6.0	5.2	6.1	6.4	6.2	6.5	7.4
Rapid City, S. Dak	10.4	11.0	11.0	10.9	10.4	10.0	9.1	8.9	9.0	10.5	12.7	14.8	15.4	16.4	16.0	16.3	15.5	15.7	14.1	13.5	11.5	9.7	10.5	10.5	12.2
Red Bluff, Cal	7.8	8.1	7.1	7.2	7.0	7.4	7.7	7.6	7.2	7.9	8.8	10.5	10.5	10.5	10.8	10.9	10.8	10.3	9.6	10.1	10.1	9.1	9.0	8.4	8.9
Rochester, N. Y	6.4	6.2	6.0	5.9	6.3	6.0	5.9	6.7	7.8	8.6	8.9	8.9	9.4	9.3	9.6	9.9	9.7	8.0	6.4	5.9	6.1	6.0	6.1	6.1	7.3
Roseburg, Oreg	2.8	2.7	2.5	1.9	1.9	1.7	1.5	1.6	1.7	2.2	2.5	3.1	3.7	4.8	4.6	4.9	5.9	6.1	6.5	6.4	6.6	6.2	4.7	3.5	3.8
Sacramento, Cal	8.3	8.2	8.1	8.4	8.4	8.0	8.0	7.6	7.1	6.7	8.8	9.7	11.1	11.2	11.8	11.8	11.4	11.0	10.4	9.5	8.5	8.2	8.3	8.3	9.1
St. Louis, Mo	9.3	9.1	9.4	8.8	9.1	9.3	9.3	9.9	10.3	11.8	12.3	12.8	13.5	14.3	13.8	13.6	13.9	13.2	12.1	10.6	9.3	9.2	8.6	9.1	10.9
St. Paul, Minn	7.1	6.6	5.6	6.1	6.1	6.7	6.9	6.5	7.4	8.2	8.6	10.3	10.2	10.4	9.6	10.1	9.5	9.0	9.3	8.5	7.2	6.9	7.4	7.2	8.0
St. Vincent, Minn	8.2	8.6	8.6	8.7	8.7	8.8	8.6	8.9	9.9	11.1	11.8	11.7	11.8	12.5	12.2	12.3	12.9	12.4	11.8	10.3	8.8	8.6	8.4	8.0	10.2
Salt Lake City, Utah	4.5	4.5	4.7	4.1	4.4	4.0	4.2	4.7	5.0	5.1	6.7	7.3	8.9	10.9	10.6	11.4	12.4	11.5	9.8	8.8	7.8	5.1	4.4	4.6	6.9
San Antonio, Tex	7.9	7.6	7.2	5.7	5.8	5.4	5.5	6.0	6.1	6.8	8.1	8.9	8.7	9.0	9.4	9.1	10.0	10.6	10.9	10.8	10.6	10.5	9.9	9.3	8.3
San Diego, Cal	3.5	3.9	3.5	3.5	3.2	3.1	3.3	3.1	3.2	2.9	3.1	4.2	6.7	8.3	9.2	9.9	9.7	9.3	8.7	7.5	6.7	5.3	3.9	3.6	5.4
Sandusky, Ohio	8.3	7.3	7.5	7.7	7.1	6.3	6.9	7.4	7.9	8.1	8.4	8.5	9.2	9.2	9.6	10.1	9.6	9.0	9.4	8.7	8.3	8.0	7.7	7.5	8.2
San Francisco, Cal	9.7	9.2	8.5	8.5	7.9	7.5	6.6	6.7	7.4	8.2	7.5	8.3	8.6	11.1	13.6	15.9	17.9	19.5	20.0	21.4	19.7	16.8	13.1	10.8	11.9
Santa Fe, N. Mex	5.9	6.2	5.8	5.8	5.7	4.9	4.8	5.1	5.6	6.5	7.6	8.9	9.9	10.9	11.5	11.6	12.1	11.6	12.6	11.7	8.9	6.6	6.6	6.2	8.0
Sault Ste. Marie, Mich.	7.2	6.9	6.6	7.4	7.1	6.8	6.3	7.3	7.7	8.7	10.2	10.5	11.2	12.0	12.3	12.5	12.4	10.8	10.3	9.5	8.7	7.6	7.4	6.9	8.9
Savannah, Ga	7.5	7.0	6.6	6.4	6.8	6.5	6.8	7.0	8.8	9.9	10.7	11.1	10.8	12.0	13.1	14.0	13.4	11.9	9.7	8.0	7.4	7.4	7.2	7.2	9.1
Seattle, Wash	[c]6.8	[c]6.5	[c]6.3	[c]6.6	[c]6.8	[c]6.6	[c]6.4	[c]5.8	[c]6.2	[c]6.0	[c]6.5	[c]6.9	[d]7.9	[d]7.7	[d]7.9	[d]8.1	[d]8.7	[d]9.0	[d]8.6	[d]8.7	[d]9.0	[d]7.3	[d]7.4	[c]7.0	[c]7.3
Shreveport, La	6.8	6.4	5.8	6.0	6.1	6.8	7.7	6.3	7.0	8.3	9.0	9.5	10.3	9.8	9.7	9.9	10.2	9.7	9.5	8.0	7.2	7.5	7.5	6.9	8.0
Sioux City, Iowa	12.3	13.0	12.2	12.4	12.2	12.0	12.9	12.5	13.0	14.0	15.0	15.6	15.5	16.1	16.6	16.6	16.2	15.8	14.0	12.6	11.7	11.6	12.6	12.7	13.7
Southport, N. C	9.4	9.4	9.3	9.6	9.0	8.8	9.2	10.5	12.1	12.9	12.8	13.7	14.8	16.0	16.4	15.9	15.6	14.4	11.5	10.7	10.5	9.4	8.2	8.7	11.6
Spokane, Wash	7.2	7.0	7.5	7.4	8.2	8.3	7.7	7.0	7.3	7.4	7.5	7.8	9.0	9.3	10.0	10.5	10.1	10.5	10.6	9.6	8.5	7.5	6.8	7.2	8.3
Springfield, Ill	9.5	9.3	9.6	9.4	9.2	9.0	8.9	9.3	10.9	11.8	12.8	13.1	13.4	14.0	14.7	14.5	13.3	12.6	11.3	9.2	8.8	9.1	10.0	9.9	11.0
Springfield, Mo	9.4	10.2	10.2	10.3	10.7	10.8	10.3	10.8	10.9	12.4	14.2	13.2	14.2	14.6	13.4	14.0	14.5	13.2	12.2	9.5	7.9	8.6	9.3	9.5	11.4
Tampa, Fla	4.7	4.7	4.4	4.6	4.8	4.6	4.5	5.0	6.8	7.6	7.8	8.1	8.6	8.0	8.5	9.7	10.5	9.7	8.2	6.6	6.0	5.5	5.1	4.8	6.6
Tatoosh Island, Wash	13.3	13.9	13.7	14.6	14.9	15.6	15.7	16.1	15.0	15.1	15.8	14.9	14.5	14.4	16.0	16.5	16.2	16.5	15.2	15.3	14.7	14.6	13.4	13.6	15.0
Titusville, Fla	10.1	9.6	8.9	9.1	8.9	7.6	7.6	8.4	10.8	12.8	13.5	13.4	14.7	15.3	16.6	17.4	17.2	17.1	16.0	13.9	12.7	12.1	11.4	10.6	12.3
Toledo, Ohio	9.1	9.0	9.1	9.2	8.1	7.7	7.7	8.2	9.8	10.4	11.6	11.9	12.7	12.9	12.3	13.0	12.7	13.7	12.5	10.7	9.8	9.2	9.4	9.2	10.4
Tucson, Ariz	6.0	6.8	6.6	6.9	6.6	6.0	6.0	6.7	5.9	5.9	7.5	7.0	6.5	7.7	8.3	10.1	10.8	12.5	12.7	13.0	11.7	9.0	7.8	6.4	8.1
Valentine, Nebr	12.6	12.3	11.8	11.1	10.7	10.4	10.8	10.7	11.9	14.2	15.8	17.5	18.7	18.5	19.0	19.9	20.9	20.0	19.9	18.3	17.3	15.0	13.5	13.1	15.2
Vicksburg, Miss	7.7	8.0	7.9	7.4	7.2	7.1	7.4	7.4	8.2	8.5	7.9	8.3	9.5	9.3	9.4	8.9	8.1	8.2	7.0	6.1	6.6	6.9	7.2	7.2	7.8
Vineyard Haven, Mass	12.4	12.6	12.4	12.4	12.5	12.6	13.0	13.9	14.0	14.4	14.5	14.4	14.3	14.4	14.9	14.5	14.5	13.2	11.6	11.7	11.8	12.6	12.9	13.0	13.3
Walla Walla, Wash	6.7	6.3	6.7	6.8	7.2	6.7	6.5	6.0	6.2	6.5	7.3	7.9	8.0	7.8	8.7	9.0	8.7	8.3	8.3	8.0	7.5	6.7	6.6	6.3	7.3
Washington, D. C	7.0	6.9	6.1	6.3	6.2	6.3	6.5	8.7	9.3	9.9	10.6	11.5	12.1	12.6	12.4	11.7	12.0	11.1	8.4	7.0	6.9	7.0	6.1	6.9	8.7
Wichita, Kans	8.8	8.7	8.0	8.0	8.6	8.8	9.3	9.1	9.9	12.0	13.3	14.0	13.8	14.8	15.6	15.8	15.3	16.1	14.8	12.6	9.8	9.3	9.0	9.3	11.4
Williston, N. Dak	12.1	10.9	10.9	10.3	11.1	10.1	9.6	10.5	10.3	12.0	12.7	13.7	14.5	15.3	16.3	16.8	16.5	15.5	14.9	13.7	13.2	12.8	12.6	12.0	12.8
Wilmington, N. C	8.3	8.0	7.5	7.8	7.6	7.3	8.0	9.2	10.0	11.1	12.6	12.9	13.9	14.5	15.1	15.1	14.4	13.2	9.7	8.8	8.3	7.3	7.8	7.8	10.3
Winnemucca, Nev	9.2	9.8	10.9	11.6	11.9	10.3	9.9	9.2	9.4	9.9	10.7	10.8	11.6	12.1	12.4	13.2	13.5	14.1	14.8	13.5	12.4	10.8	8.7	7.7	11.2
Woods Holl, Mass	16.8	16.5	16.0	15.9	16.2	16.7	15.7	17.6	17.4	17.6	17.8	17.8	17.5	19.7	20.2	20.1	20.1	18.3	16.3	17.1	17.4	17.6	18.2	17.9	17.6
Yuma, Ariz	7.6	6.6	7.1	6.6	5.7	5.5	4.9	5.5	5.5	6.5	8.0	8.6	9.7	9.7	10.5	10.2	10.5	11.1	11.6	11.2	10.7	9.5	9.4	8.3	8.4

[a] For 25 days. [b] For 26 days. [c] For 28 days. [d] For 29 days.

TABLE VIII.—*Prevailing and resultant winds from self-registers for April*, 1894.

Number.	Station.	Prevailing wind.		Total movement.		Resultant direction.			Resultant movement.		Azimuth of movement minus direction.	Ratio of resultant movement to total movement.
		Direction from.	Duration.	Monthly.	Hourly average.	Direction from.	Duration.	Average hourly velocity.	Direction from.	Amount.		
	(1)	(2)	(3) Hours.	(4) Miles.	(5) Miles.	(6)	(7) Hours.	(8) Miles.	(9)	(10) Miles.	(11) °	(12)
1	Eastport, Me	ne.	207	9,791	13.6	n. 14 e.	144	30.7	n. 32 e.	4,422	+ 18	0.452
2	Portland, Me	n.	160	6,826	9.5	n. 46 w.	80	19.4	n. 4 e.	1,556	+ 50	0.228
4	Boston, Mass	sw.	179	9,808	13.6	n. 72 w.	130	15.1	n. 26 w	1,968	+ 46	0.201
5	Nantucket, Mass	ne.	186	11,419	15.9	n. 34 w.	138	20.2	n. 33 e.	2,787	+ 67	0.244
8	New Haven, Conn	s.	160	7,811	10.8	n. 84 w.	77	18.6	w.	1,431	− 6	0.183
10	Albany, N. Y	n.	170	6,719	9.3	n. 36 w.	142	9.2	n. 16 w.	1,314	+ 20	0.196
11	New York, N. Y	nw.	192	8,115	11.3	s. 72 w.	110	15.0	n. 56 w.	1,646	+ 52	0.203
13	Philadelphia, Pa	nw.	145	8,745	12.1	n. 67 w.	153	15.0	n. 32 w.	2,303	+ 35	0.263
15	Baltimore, Md	nw.	178	6,351	8.8	n. 87 w.	112	16.8	n. 56 w.	1,880	+ 31	0.296
16	Washington, D. C	nw.	229	6,283	8.7	n. 80 w.	121	16.3	n. 60 w.	1,976	+ 20	0.314
17	Lynchburg, Va	nw.	211	3,951	5.5	n. 74 w.	143	9.4	n. 73 w.	1,338	+ 1	0.339
18	Norfolk, Va	nw.	116	7,264	10.1	n. 51 e.	13	82.9	s. 52 w.	1,078	−179	0.148
24	Wilmington, N. C	sw.	158	7,387	10.3	s. 46 w.	77	18.1	s. 42 w.	1,395	− 4	0.189
26	Augusta, Ga	se.	141	4,831	6.7	s. 6 w.	116	7.6	s. 42 w.	886	+ 36	0.183
27	Savannah, Ga	s.	206	6,517	9.1	s. 8 w.	213	8.7	s. 14 w.	1,849	+ 6	0.284
28	Jacksonville, Fla	se.	168	5,684	7.9	s. 38 e.	160	9.0	s. 18 e.	1,446	+ 20	0.254
30	Key West, Fla	e.	231	5,850	8.1	n. 61 e.	314	10.6	n. 68 e.	3,334	+ 7	0.570
33	Atlanta, Ga	nw.	138	7,800	10.8	s. 63 w.	119	15.0	s. 77 w.	1,787	+ 14	0.229
38	Vicksburg, Miss	se.	153	5,623	7.8	s. 39 e.	192	8.6	s. 26 e.	1,660	+ 13	0.295
39	New Orleans, La	se.	198	5,935	8.2	s. 42 e.	305	7.9	s. 44 e.	2,402	− 2	0.405
42	Little Rock, Ark	s.	142	5,669	7.9	s. 39 e.	158	5.9	s. 36 e.	931	+ 3	0.164
44	Galveston, Tex	se.	298	8,573	11.9	s. 31 e.	446	12.4	s. 35 e.	5,520	− 4	0.644
48	Knoxville, Tenn	ne.	174	8,054	5.6	n. 27 w.	164	7.1	n. 75 w.	1,167	− 48	0.288
49	Memphis, Tenn	se.	139	5,798	8.1	s. 22 e.	147	7.4	s. 10 e.	1,092	+ 12	0.188
50	Nashville, Tenn	se.	146	4,267	5.9	s. 52 e.	29	16.1	s. 44 w.	467	+ 96	0.109
52	Louisville, Ky	sw.	151	6,008	8.3	s. 4 w.	77	12.2	s. 40 w.	938	+ 36	0.156
53	Indianapolis, Ind	nw.	119	5,043	7.0	s. 49 w.	46	13.3	s. 20 w.	611	− 29	0.121
54	Cincinnati, Ohio	sw.	117	5,639	7.8	s. 43 w.	25	33.4	s. 89 w.	835	+ 46	0.148
55	Columbus, Ohio	nw.	111	7,523	10.4	n. 8 e.	65	13.9	n. 68 w.	902	− 76	0.120
56	Pittsburg, Pa	nw.	166	4,928	6.8	n. 38 w.	112	8.2	n. 74 w.	915	− 36	0.186
58	Buffalo, N. Y	sw.	159	6,423	8.9	n. 88 w.	139	13.0	n. 89 w.	1,814	− 1	0.282
60	Rochester, N. Y	sw.	207	5,248	7.3	s. 51 w.	147	10.8	s. 63 w.	1,593	+ 12	0.302
62	Cleveland, Ohio	se.	172	7,847	10.9	n. 22 w.	64	4.8	s. 66 w.	306	− 92	0.039
64	Toledo, Ohio	e.	207	7,505	10.4	n. 43 e.	95	4.8	n. 77 e.	452	+ 34	0.060
65	Detroit, Mich	ne.	157	7,362	10.2	n. 51 e.	100	1.9	s. 70 e.	186	+ 59	0.025
66	Alpena, Mich	se.	208	7,450	10.3	n. 80 e.	125	14.3	s. 88 e.	1,788	+ 12	0.240
67	Grand Haven, Mich	e.	191	7,510	10.4	n. 86 e.	187	5.4	s. 42 e.	1,013	+ 52	0.135
68	Marquette, Mich	ne.	151	7,108	9.9	n. 27 e.	171	3.5	s. 45 e.	597	+108	0.084
70	Sault Ste. Marie, Mich	se.	272	6,427	8.9	s. 42 e.	91	14.4	s. 42 e.	1,314	0	0.204
71	Chicago, Ill	ne.	190	9,739	13.5	s. 71 e.	148	20.1	s. 48 e.	2,973	+ 23	0.305
72	Milwaukee, Wis	ne.	163	7,143	9.9	n. 81 e.	216	8.8	s. 81 e.	1,899	+ 18	0.266
74	Duluth, Minn	ne.	343	4,872	6.8	n. 49 e.	478	7.5	n. 42 e.	3,576	− 7	0.734
75	Moorhead, Minn	n.	178	8,708	12.1	n. 53 e.	73	16.8	s. 82 e.	1,227	+ 45	0.141
77	Bismarck, N. Dak	se.	198	10,245	14.2	n. 50 e.	152	16.4	n. 30 e.	2,488	− 30	0.243
79	Saint Paul, Minn	se.	228	5,738	8.0	s. 81 e.	146	5.0	s. 58 e.	725	+ 23	0.126
81	Davenport, Iowa	e.	161	8,114	11.3	s. 40 e.	115	8.5	s. 5 w.	980	+ 45	0.121
82	Des Moines, Iowa	se.	169	7,476	10.4	s. 39 e.	101	12.1	s. 9 e.	1,223	+ 30	0.164
88	Saint Louis, Mo	se.	193	7,873	10.9	s. 18 e.	193	12.5	s. 16 w.	2,414	+ 34	0.307
90	Kansas City, Mo	se.	172	7,153	9.9	s. 42 e.	165	9.1	s. 7 e.	1,498	+ 35	0.209
92	Omaha, Nebr	se.	245	6,988	9.7	s. 70 e.	115	9.7	s. 45 e.	1,112	+ 25	0.159
96	Huron, S. Dak	se.	242	11,989	16.6	s. 76 e.	56	13.7	s. 55 e.	766	+ 21	0.064
98	Havre, Mont	sw.	197	7,629	10.6	n. 85 w.	315	11.5	n. 87 w.	3,626	− 2	0.475
100	Helena, Mont	s.	241	7,087	9.8	s. 24 w.	483	10.6	s. 25 w.	5,097	+ 1	0.719
106	Colorado Springs, Colo	n.	288	8,755	12.2	n. 13 e.	144	11.6	n. 8 w.	1,673	− 21	0.191
107	Denver, Colo	s.	151	6,562	9.1	s. 65 w.	106	9.3	n. 78 w.	985	+ 37	0.150
108	Pikes Peak, Colo	w.	183	18,394	25.5	n. 84 w.	288	32.7	s. 86 w.	9,405	− 10	0.511
111	Dodge City, Kans	se.	226	10,693	14.9	s. 48 e.	76	26.1	s. 35 e.	1,987	+ 13	0.186
114	Abilene, Tex	se.	215	8,685	12.1	s. 18 e.	269	13.2	s. 14 e.	3,814	+ 4	0.439
116	El Paso, Tex	nw.	309	8,599	11.9	n. 62 w.	409	14.8	n. 64 w.	6,034	− 2	0.702
117	Santa Fe, N. Mex	nw.	162	5,791	8.0	n. 51 w.	72	20.2	n. 76 w.	1,456	− 25	0.251
119	Yuma, Ariz	w.	170	6,012	8.4	w.	258	12.9	n. 79 w.	3,319	+ 11	0.552
122	Salt Lake City, Utah	nw.	247	4,958	6.9	n. 43 w.	123	16.6	n. 57 w.	2,041	− 14	0.412
125	Spokane, Wash	sw.	287	5,995	8.3	s. 13 w.	436	10.3	s. 22 w.	4,479	+ 9	0.747
130	Seattle, Wash	se.	175	4,057	7.3	s. 36 e.	202	9.8	s. 33 e.	1,982	+ 3	0.488
132	Portland, Oregon	nw.	175	6,534	9.1	n. 86 w.	224	11.8	s. 73 w.	2,646	− 21	0.405
133	Roseburg, Oregon	nw.	198	2,701	3.8	n. 56 w.	187	6.0	n. 60 w.	1,120	− 4	0.415
137	San Francisco, Cal	sw.	495	8,533	11.9	s. 48 w.	536	13.3	s. 46 w.	7,124	− 2	0.835
140	San Diego, Cal	sw.	186	3,874	5.4	w.	316	7.3	w.	2,308	0	0.596

TABLE IX.—*Resultant winds from observations at 8 a. m. and 8 p. m., daily, during April, 1894.*

Number.	Station.	Component direction from—				Resultant.	
		N.	S.	E.	W.	Direction from—	Duration.
	New England.	*Hours.*	*Hours.*	*Hours.*	*Hours.*	°	*Hours.*
1	Eastport, Me	29	14	17	14	n. 11 e.	15
2	Portland, Me	23	18	13	17	n. 39 w.	6
3	Northfield, Vt	29	19	13	8	n. 27 e.	11
4	Boston, Mass	23	17	13	20	n. 49 w.	9
5	Nantucket, Mass	18	10	20	26	n. 37 w.	10
6	Woods Holl, Mass	9	9	8	12	.. .. w.	4
7	Block Island, R. I	19	20	14	25	s. 85 w.	11
8	New Haven, Conn	26	22	12	16	n. 45 w.	6
9	New London, Conn	21	20	7	25	n. 87 w.	18
	Middle Atlantic States.						
10	Albany, N. Y	30	19	10	13	n. 15 w.	11
11	New York, N. Y	23	20	17	22	n. 59 w.	6
12	Harrisburg, Pa	23	12	14	20	n. 29 w.	12
13	Philadelphia, Pa	23	20	9	21	n. 76 w.	12
14	Atlantic City, N. J	18	22	15	21	s. 56 w.	7
15	Baltimore, Md	21	20	13	23	n. 84 w.	10
16	Washington, D. C	24	21	10	20	n. 73 w.	10
17	Lynchburg, Va	21	16	13	24	n. 66 w.	12
18	Norfolk, Va	22	19	17	16	n. 18 e.	3
	South Atlantic States.						
19	Charlotte, N. C	14	25	15	20	s. 24 w.	12
20	Hatteras, N. C	20	20	20	19	.. .. e.	1
21	Kittyhawk, N. C	24	17	17	17	.. .. n.	7
22	Raleigh, N. C	23	20	15	16	n. 18 w.	3
23	Southport, N. C	14	19	17	22	s. 45 w.	7
24	Wilmington, N. C	16	21	18	21	s. 31 w.	6
25	Charleston, S. C	11	26	17	16	s. 4 e.	15
26	Augusta, Ga	14	22	18	16	s. 14 e.	8
27	Savannah, Ga	12	30	14	16	s. 6 w.	18
28	Jacksonville, Fla	16	23	23	15	s. 49 e.	11
	Florida Peninsula.						
29	Jupiter, Fla	13	18	28	12	s. 69 e.	17
30	Key West, Fla	21	8	33	6	n. 64 e.	30
31	Tampa, Fla	23	11	19	23	n. 18 w.	13
32	Titusville, Fla	13	16	31	11	s. 81 e.	20
	Eastern Gulf States.						
33	Atlanta, Ga	15	18	17	25	s. 69 w.	8
34	Pensacola, Fla	14	29	15	19	s. 15 w.	16
35	Mobile, Ala	16	27	13	12	s. 5 e.	11
36	Montgomery, Ala	20	21	14	19	s. 79 w.	5
37	Meridian, Miss	21	24	16	14	s. 34 e.	4
38	Vicksburg, Miss	10	25	25	14	s. 36 e.	19
39	New Orleans, La	10	30	27	6	s. 46 e.	29
	Western Gulf States.						
40	Shreveport, La	13	29	25	9	s. 45 e.	23
41	Fort Smith, Ark	13	10	38	11	n. 84 e.	27
42	Little Rock, Ark	12	24	20	15	s. 23 e.	13
43	Corpus Christi, Tex	6	30	42	2	s. 59 e.	47
44	Galveston, Tex	6	35	26	8	s. 32 e.	34
45	Palestine, Tex	14	27	18	18	.. .. s.	13
46	San Antonio, Tex	11	25	36	4	s. 66 e.	35
	Ohio Valley and Tennessee.						
47	Chattanooga, Tenn	17	26	14	21	s. 38 w.	11
48	Knoxville, Tenn	23	8	20	24	n. 15 w.	16
49	Memphis, Tenn	10	24	25	13	s. 41 e.	18
50	Nashville, Tenn	20	16	20	17	n. 37 e.	5
51	Lexington, Ky	21	22	21	22	s. 45 w.	1
52	Louisville, Ky	17	24	18	13	s. 36 e.	9
53	Indianapolis, Ind	19	17	20	20	.. .. n.	2
54	Cincinnati, Ohio	19	19	19	18	.. .. e.	1
55	Columbus, Ohio	22	14	20	16	n. 27 e.	9
56	Pittsburg, Pa	25	14	15	16	n. 5 w.	11
57	Parkersburg, W. Va	19	19	15	21	.. .. w.	6
	Lower Lake Region.						
58	Buffalo, N. Y	14	13	17	31	n. 86 w.	14
59	Oswego, N. Y	20	18	10	20	n. 79 w.	10
60	Rochester, N. Y	14	22	19	24	s. 32 w.	9
61	Erie, Pa	17	22	15	19	s. 39 w.	6
62	Cleveland, Ohio	22	17	20	16	n. 39 e.	6
63	Sandusky, Ohio	17	17	25	15	.. .. e.	10
64	Toledo, Ohio	17	14	24	17	n. 67 e.	8
65	Detroit, Mich	19	16	26	16	n. 73 e.	10
	Upper Lake Region.						
66	Alpena, Mich	20	18	23	16	n. 74 e.	7
67	Grand Haven, Mich	14	11	25	17	n. 75 e.	11
68	Marquette, Mich	28	18	17	11	n. 31 e.	12
69	Port Huron, Mich	25	18	22	11	n. 58 e.	13
70	Sault Ste. Marie, Mich	14	18	23	20	s. 37 e.	5
71	Chicago, Ill	48	23	26	11	s. 72 e.	16
72	Milwaukee, Wis	20	18	27	12	n. 82 e.	15
73	Green Bay, Wis	21	19	25	9	n. 83 e.	16
74	Duluth, Minn	36	3	33	6	n. 40 e.	43
	North Dakota.						
75	Moorhead, Minn	24	20	13	13	.. .. n.	4
76	Saint Vincent, Minn	27	14	21	6	n. 49 e.	20
77	Bismarck, N. Dak	22	15	25	14	n. 58 e.	13
78	Williston, N. Dak	25	16	21	11	n. 48 e.	14
	Upper Mississippi Valley.						
79	Saint Paul, Minn	17	19	26	17	s. 77 e.	9
80	La Crosse, Wis	18	25	16	10	s. 41 e.	9
81	Davenport, Iowa	12	18	25	19	s. 45 e.	8
82	Des Moines, Iowa	13	18	26	16	s. 63 e.	11
83	Dubuque, Iowa	11	21	24	17	s. 35 e.	12
84	Keokuk, Iowa	7	21	23	20	s. 12 e.	14
85	Cairo, Ill	13	24	23	13	s. 42 e.	15
86	Springfield, Ill	8	89	15	17	s. 5 w.	21
87	Hannibal, Mo	10	18	21	23	s. 14 w.	8
88	Saint Louis, Mo	13	22	26	14	s. 53 e.	15
	Missouri Valley.						
89	Columbia, Mo	5	10	12	10	s. 22 e.	5
90	Kansas City, Mo	15	24	21	10	s. 67 e.	23
91	Springfield, Mo	13	27	22	16	s. 23 e.	15
92	Omaha, Nebr	15	17	25	16	s. 77 e.	9
93	Valentine, Nebr	24	17	13	17	n. 30 w.	8
94	Sioux City Iowa	20	20	24	12	.. .. e.	12
95	Pierre, S. Dak	22	20	22	14	n. 76 e.	8
96	Huron, S. Dak	21	21	21	10	.. .. e.	11
	Northern Slope.						
98	Havre, Mont	21	9	10	23	n. 62 w.	26
99	Miles City, Mont	16	18	16	24	s. 76 w.	8
100	Helena, Mont	2	43	8	23	s. 20 w.	44
101	Rapid City, S. Dak	31	12	10	18	n. 23 w.	21
102	Cheyenne, Wyo	27	11	2	31	n. 61 w.	33
103	Lander, Wyo	12	23	9	30	s. 62 w.	24
105	North Platte, Nebr	21	17	13	22	n. 66 w.	10
	Middle Slope.						
106	Colorado Springs, Colo	35	14	7	11	n. 11 w.	21
107	Denver, Colo	19	26	9	22	s. 62 w.	15
108	Pikes Peak, Colo	18	15	6	34	n. 84 w.	28
109	Pueblo, Colo	21	12	15	20	n. 29 w.	10
110	Concordia, Kans	16	25	20	10	s. 48 e.	14
111	Dodge City, Kans	19	19	18	18	.....	0
112	Wichita, Kans	16	28	16	13	s. 14 e.	12
113	Oklahoma, Okla	14	29	21	11	s. 34 e.	18
	Southern Slope.						
114	Abilene, Tex	12	32	19	11	s. 22 e.	22
115	Amarillo, Tex	15	30	8	14	s. 22 w.	16
	Southern Plateau.						
116	El Paso, Tex	22	3	11	38	n. 72 w.	28
117	Santa Fe, N. Mex	23	17	19	19	.. .. n.	6
118	Tucson, Ariz	17	23	17	21	s. 34 w.	7
119	Yuma, Ariz	19	11	9	34	n. 72 w.	26
	Middle Plateau.						
121	Winnemucca, Nev	16	21	10	24	s. 70 w.	15
122	Salt Lake City, Utah	21	16	11	25	n. 70 w.	15
	Northern Plateau.						
123	Baker City, Oreg	22	21	16	23	n. 82 w.	7
124	Idaho Falls, Idaho	9	39	14	12	s. 4 e.	30
125	Spokane, Wash	5	39	10	19	s. 15 w.	35
126	Walla Walla, Wash	6	41	8	16	s. 13 w.	36
	North Pacific Coast Region.						
127	Fort Canby, Wash	16	19	11	23	s. 76 w.	12
128	Olympia, Wash	11	30	3	26	s. 50 w.	30
129	Port Angeles, Wash	11	25	8	25	s. 51 w.	22
130	Seattle, Wash	8	30	25	8	s. 38 e.	28
131	Tatoosh Island, Wash	4	22	20	28	s. 24 w.	20
132	Portland, Oreg	22	22	6	22	.. .. w.	16
133	Roseburg, Oreg	24	12	9	28	n. 58 w.	22
	Middle Pacific Coast Region.						
134	Eureka, Cal	28	12	6	16	n. 32 w.	19
135	Red Bluff, Cal	30	13	10	28	n. 47 w.	25
136	Sacramento, Cal	23	24	7	25	s. 87 w.	18
137	San Francisco, Cal	4	37	2	37	s. 47 w.	48
	South Pacific Coast Region.						
138	Fresno, Cal	33	7	10	31	n. 39 w.	33
139	Los Angeles, Cal	13	10	16	30	n. 78 w.	14
140	San Diego, Cal	20	13	5	31	n. 75 w.	27

Chart I. Tracks of C

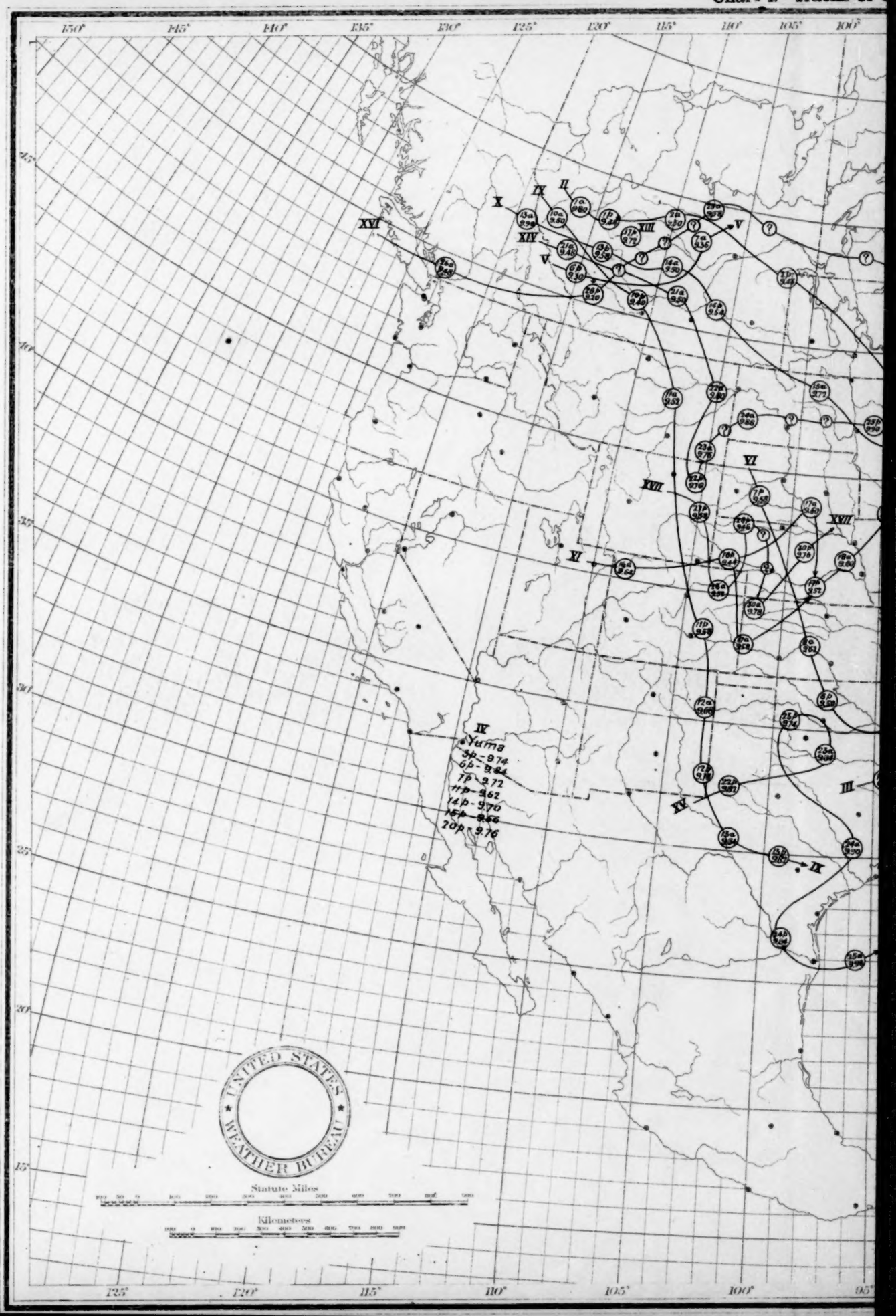
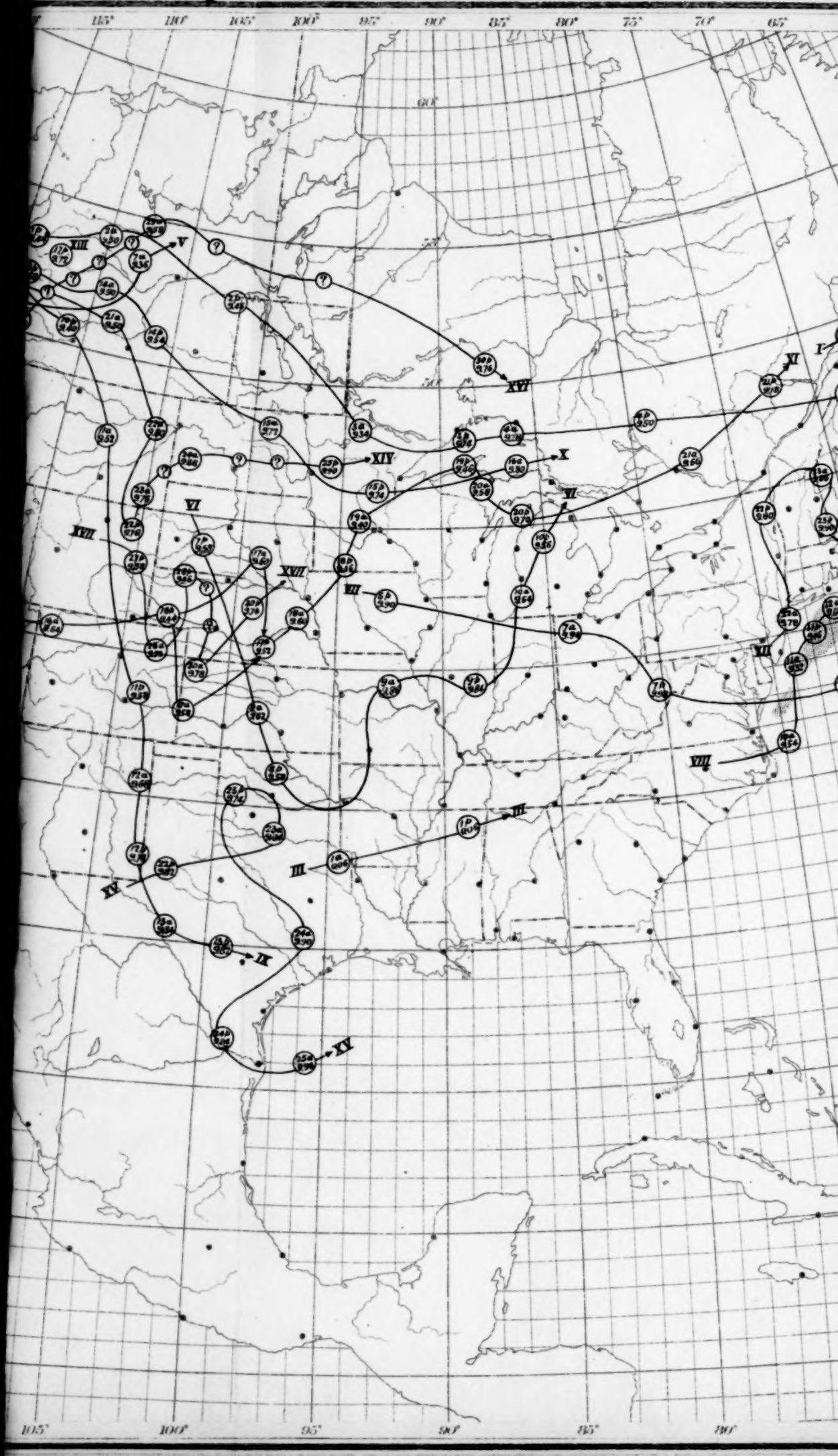
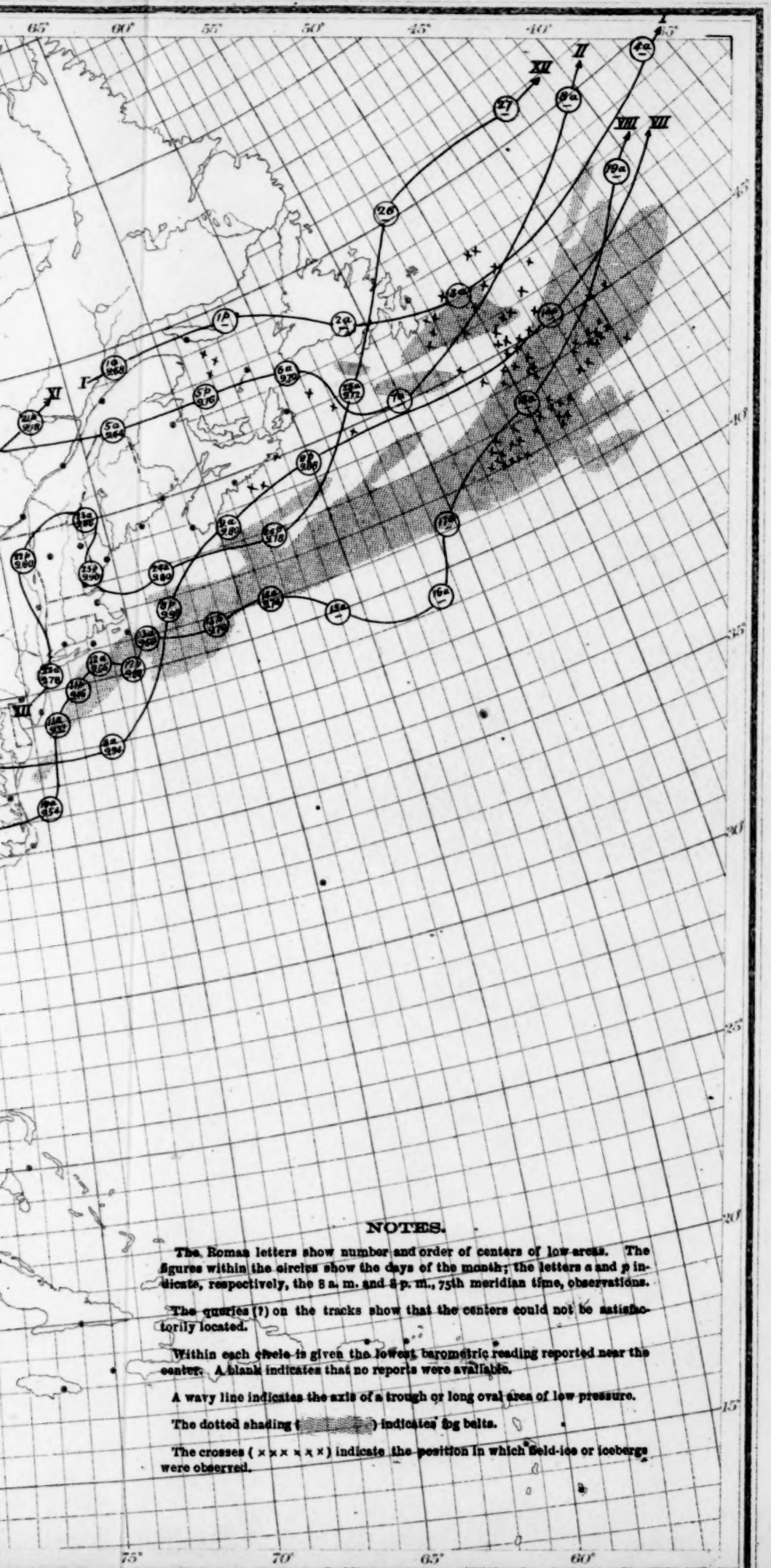


Chart I. Tracks of Centers of Low Areas. April, 1894.





NOTES.

The Roman letters show number and order of centers of low areas. The figures within the circles show the days of the month; the letters *a* and *p* indicate, respectively, the 8 a. m. and 8 p. m., 75th meridian time, observations.

The queries (?) on the tracks show that the centers could not be satisfactorily located.

Within each circle is given the lowest barometric reading reported near the center. A blank indicates that no reports were available.

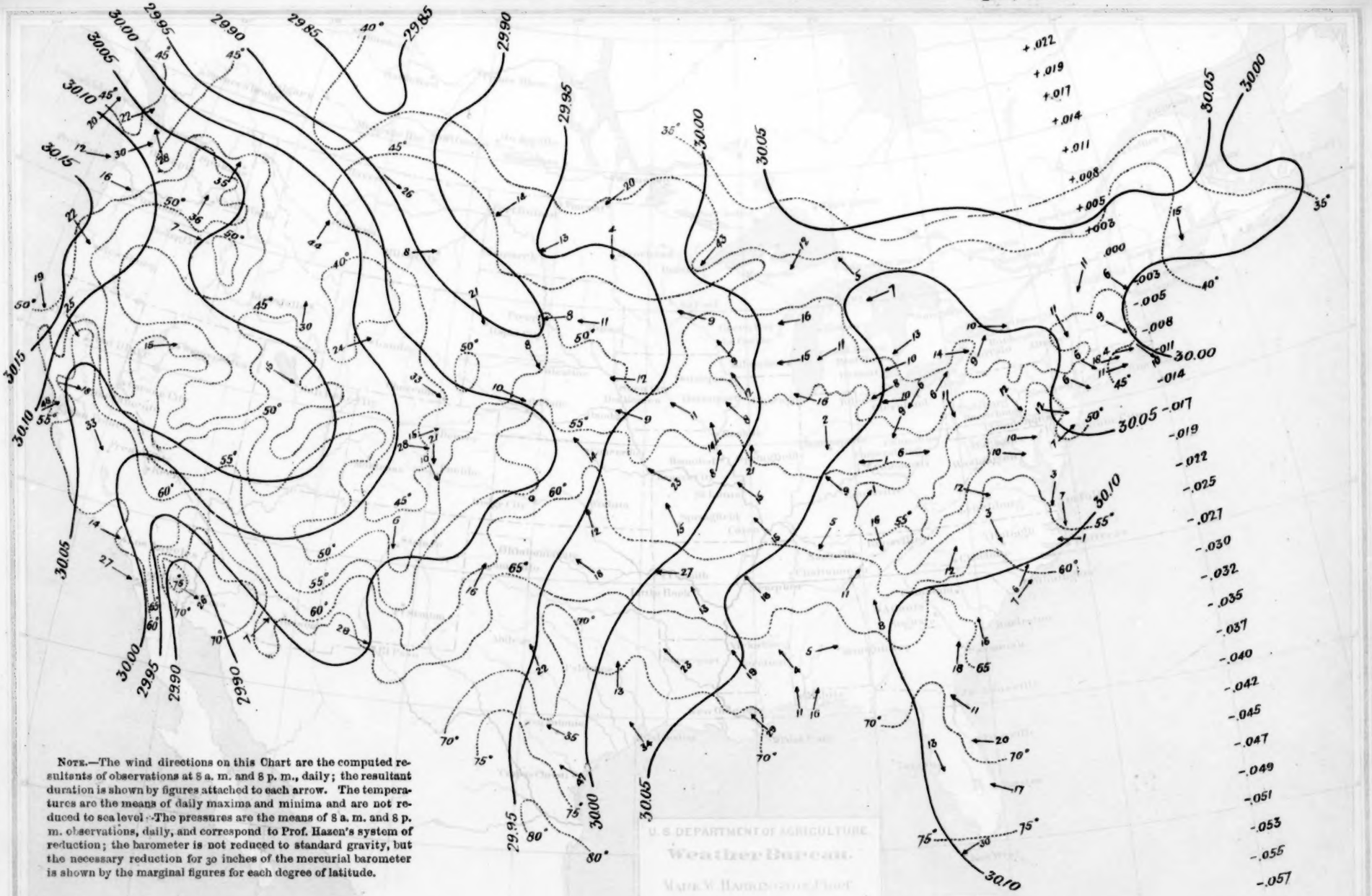
A wavy line indicates the axis of a trough or long oval area of low pressure.

The dotted shading ( ) indicates fog belts.

The crosses (× × × × × ×) indicate the position in which field-ice or icebergs were observed.

Chart II. Isobars, Isotherms, and Resultant Winds. April, 1894.

Chart II. Isobars, Isotherms, and Resultant Winds. April, 1894.



NOTE.—The wind directions on this Chart are the computed resultants of observations at 8 a. m. and 8 p. m., daily; the resultant duration is shown by figures attached to each arrow. The temperatures are the means of daily maxima and minima and are not reduced to sea level.—The pressures are the means of 8 a. m. and 8 p. m. observations, daily, and correspond to Prof. Hazen's system of reduction; the barometer is not reduced to standard gravity, but the necessary reduction for 30 inches of the mercurial barometer is shown by the marginal figures for each degree of latitude.

Chart III. Total Precipitation. April, 1894.

Chart III. Total Precipitation. April, 1894.

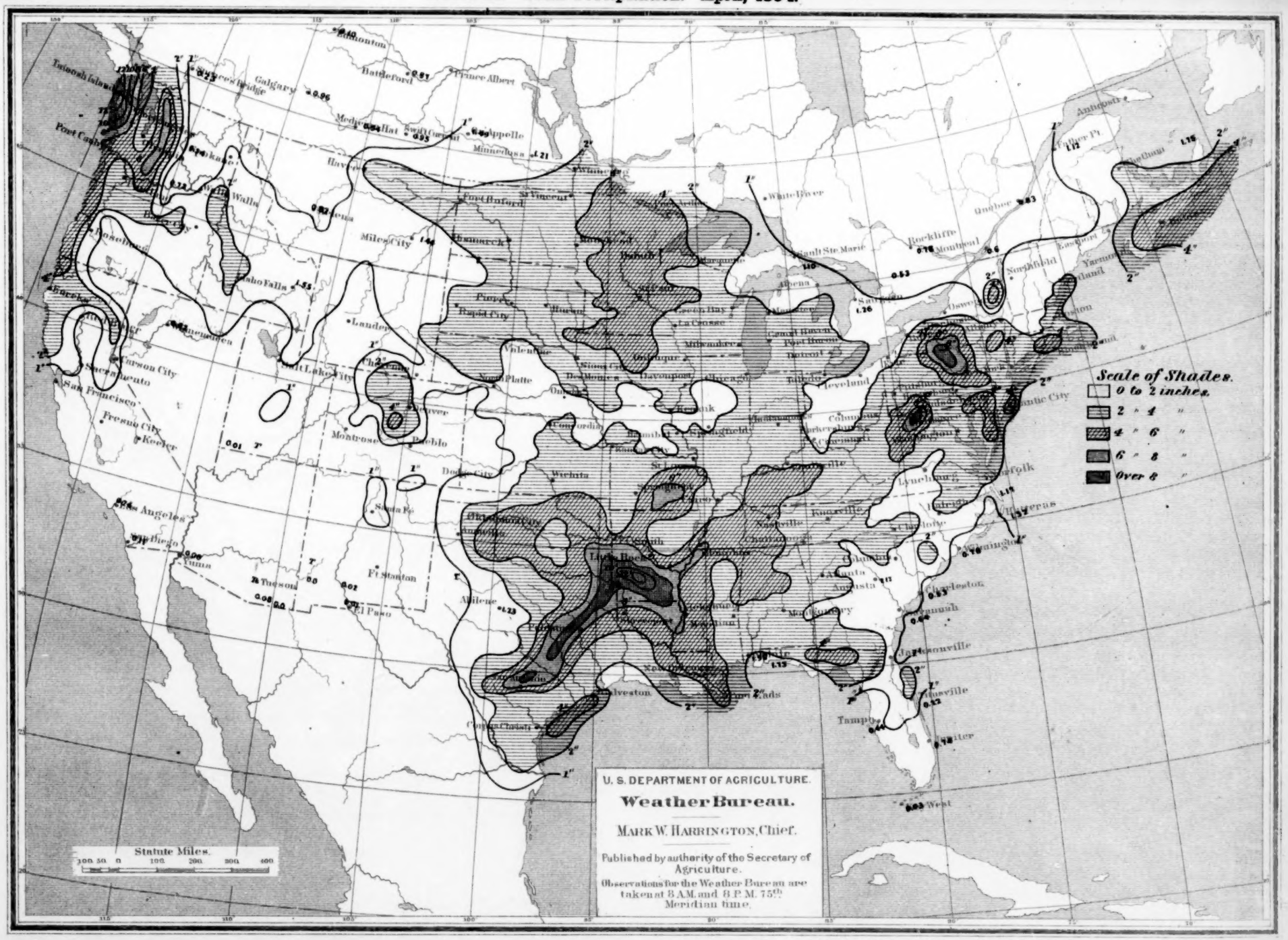
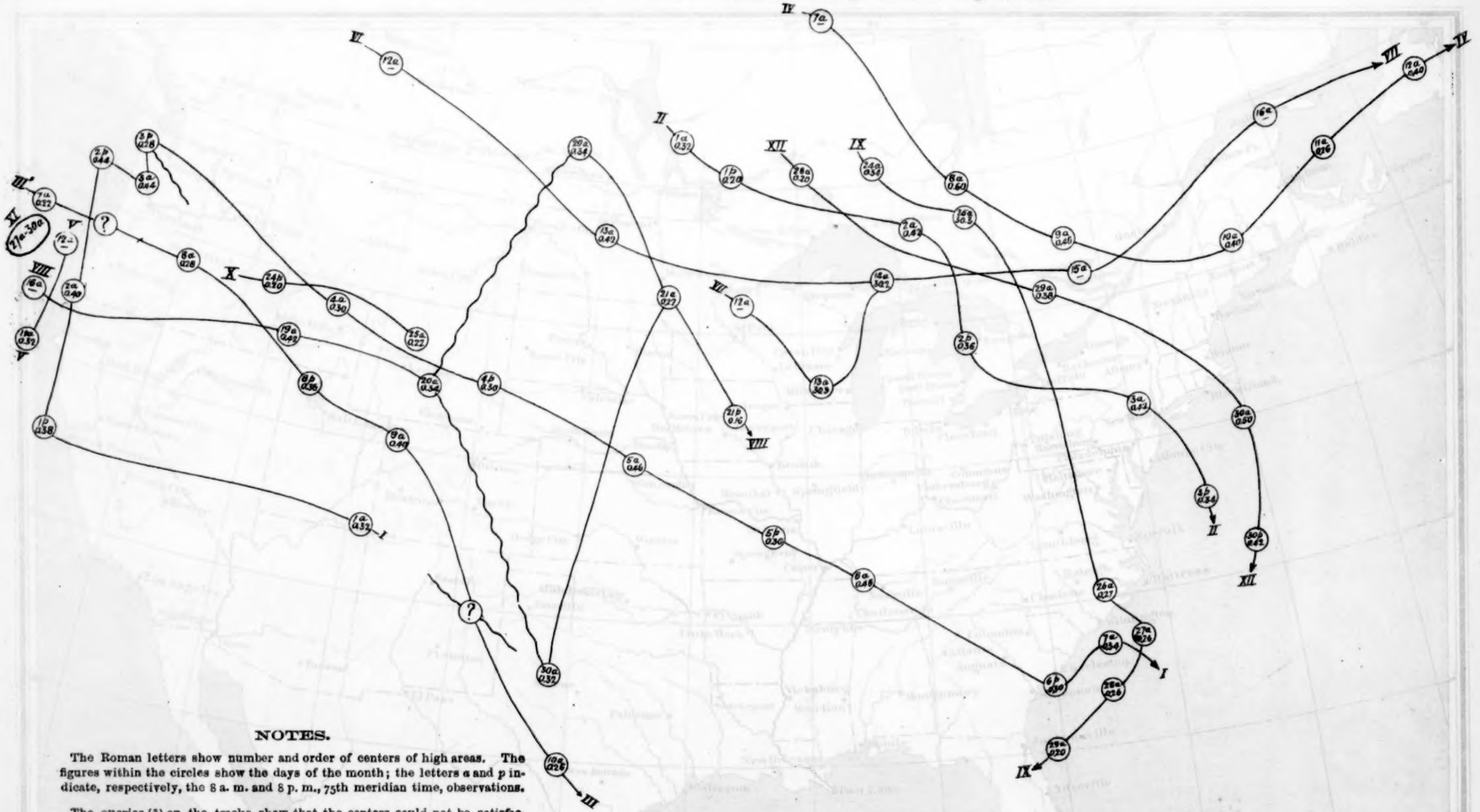

Scale of Shades.
0 to 2 inches.
2 " 4 "
4 " 6 "
6 " 8 "
Over 8 "
Statute Miles.
100 50 0 100 200 300 400
U. S. DEPARTMENT OF AGRICULTURE.
Weather Bureau.
MARK W. HARRINGTON, Chief.
Published by authority of the Secretary of Agriculture.
Observations for the Weather Bureau are taken at 8 A.M. and 8 P.M. 75th Meridian time.

Chart IV. Tracks of Centers of High Areas. April 1924.

Chart IV. Tracks of Centers of High Areas. April, 1894.



NOTES.

The Roman letters show number and order of centers of high areas. The figures within the circles show the days of the month; the letters a and p indicate, respectively, the 8 a. m. and 8 p. m., 75th meridian time, observations.

The queries (?) on the tracks show that the centers could not be satisfactorily located.

Within each circle is given the lowest barometric reading reported near the center. A blank indicates that no reports were available.

Within each circle is given the highest barometric reading reported near the center.

A short wavy line indicates the axis of a ridge of high pressure.

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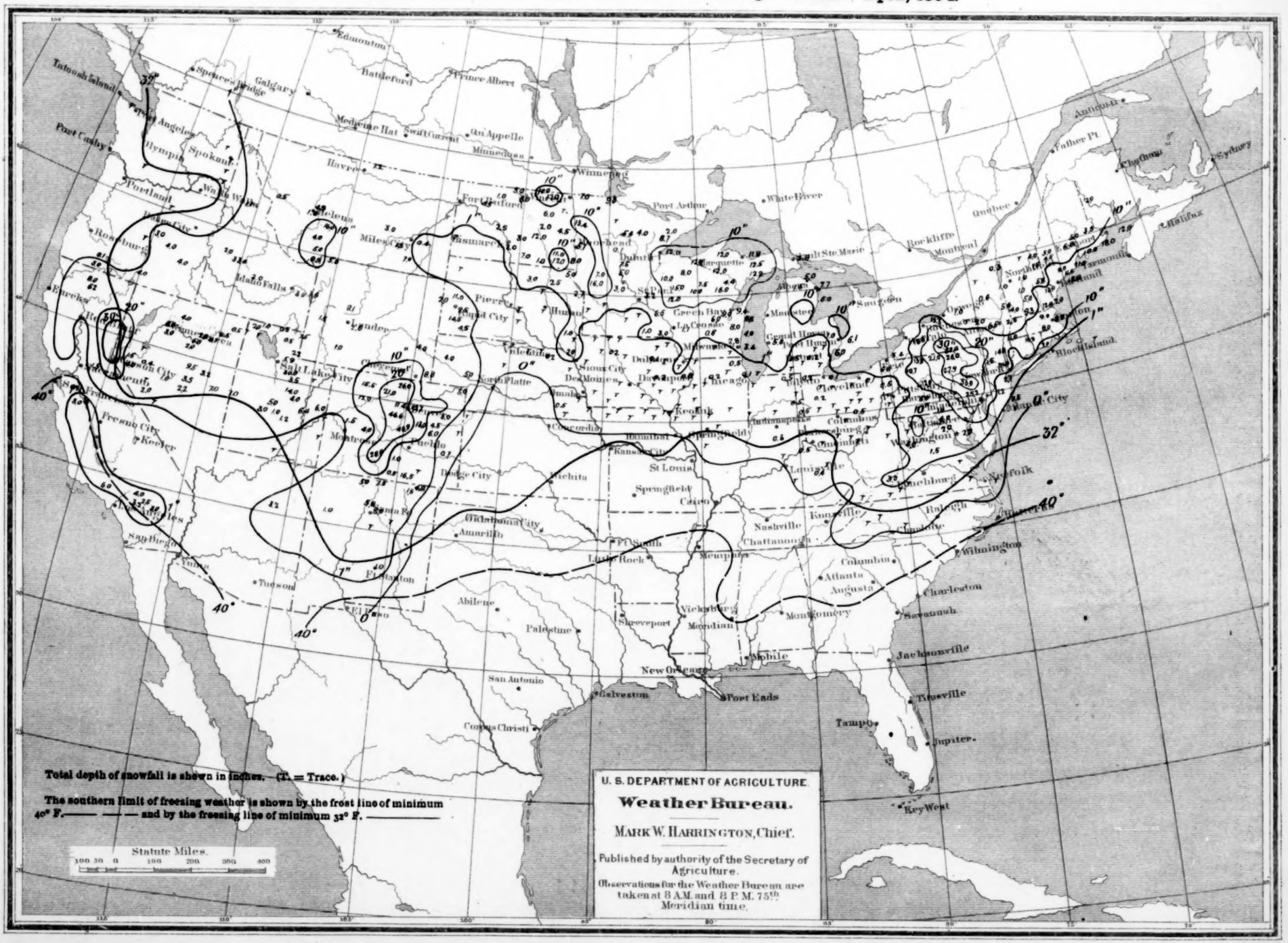
Chart V. Depth of Snowfall (inches) and Limits of Freezing Weather. April, 1894.


Total depth of snowfall is shown in inches. (T. = Trace.)
The southern limit of freezing weather is shown by the frost line of minimum 40° F. ——— ——— and by the freezing line of minimum 32° F. ———
Statute Miles.
100 50 0 100 200 300 400
U. S. DEPARTMENT OF AGRICULTURE.
Weather Bureau.
MARK W. HARRINGTON, Chief.
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